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The Impact of Helicopter Parenting on Youths: A Multi-Method Approach

Submitted by

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Generative AI technology was not used in the preparation of any part of this thesis.

Abstract

Helicopter parenting (HP) describes risk-averse parents who provide well-intentioned but developmentally inappropriate levels of involvement in their children's lives. HP's autonomy-limiting practices unintentionally hinder children's development of socioemotional competencies and skills, impairing their ability to navigate day-to-day social demands and challenges, particularly as they transition into adulthood. This thesis delves into personal experiences, individual, and societal implications, and intervention strategies related to HP and youth development, aiming to understand how HP impacts youths. To fulfil this aim, the thesis adopted a multi-method approach across three research chapters. Chapter 2 employed Latent Dirichlet Allocation (LDA) to discover hidden themes within the subreddit r/helicopterparents to understand Reddit users' experiences with HP ($N = 713$ posts). Chapter 3 examined the impact of HP on other-profitable behaviours and comprised online survey responses from Singaporean youths ($N = 531$) who were assessed on their egocentric selfishness and prosocial behaviour. Chapter 4 involved a pre-post study ($N = 116$) that examined the mediation effect of basic psychological needs on the relationship between HP and state-trait resilience. It also evaluated the intervention effectiveness of the Outward Bound Singapore program in improving resilience. As proposed, the negative impact of HP on youths was evident across all three studies. Overall, findings from the project illuminate HP as a crucial determining factor of behaviours that affect both the individual and society, augmenting the development of appropriate intervention programs that promote positive youth development. Future research should employ dyadic data and longitudinal studies to examine the interplay between parent and youth perceptions of HP.

Keywords: helicopter parenting, youths, Singapore, mixed-methods, reddit, latent Dirichlet allocation (LDA), social cognition, egocentric selfishness, prosocial behaviour, basic psychological needs, resilience, outdoor education, outward bound Singapore

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Chapter 1

Introduction

Parenting, as the cornerstone of socialisation, plays a pivotal role in shaping an individual's acquisition of valuable characteristics essential for the effective functioning within a society (Gauvain & Parke, 2010). Parents' vital role in socialisation stems from their status as primary caregivers and their capacity to supervise their children's surroundings and facilitate access to resources (Denham et al., 2015; Grusec, 2011). For instance, parents directly influence their children through their behaviours and the emotional environment they create while also indirectly shaping their development through choices such as selecting schools, neighbourhoods, and friends (Cheung & Lim, 2022). Although socialisation is a lifelong process, evidence suggests parents continue to influence their children as they navigate significant developmental stages (Clark et al., 2015). Over the past 80 years, a plethora of studies have consistently highlighted the crucial role of parenting in child development (Kuppens & Ceulemans, 2018). Notably, parents employ specific methods to raise their children that are considered universal rather than culturally bound (Alizadeh & Andries, 2002).

Researchers study parenting methods by examining either (i) parenting practices, (ii) parenting dimensions, or (iii) parenting styles (Kuppens & Ceulemans, 2018). Parenting practices describe specific, goal-directed behaviours that parents use to socialise their children (e.g., supervising homework, disciplining, and problem-solving; Darling & Steinberg, 1993; Prevatt, 2003), while parenting dimensions describe overarching parenting practices often identified through factor analytic techniques. The two widely used dimensions of parenting are *parental support* and *parental control*. Parental support refers to the emotional aspect of the parent-child relationship, demonstrated through involvement, acceptance, emotional availability, warmth, and responsiveness (Cummings et al., 2000).

Parental control encompasses behavioural control (e.g., regulating child behaviour through rules and discipline; Barber, 2002; Maccoby, 1990; Steinberg, 1990) and psychological control (e.g., manipulating children's thoughts and emotions; Barber et al., 2005). The three parenting dimensions (i.e., parental support, behavioural control, and psychological control) have been identified as conceptually distinct, although they exhibit some degree of relationship (Barber et al., 2005; Soenens et al., 2012).

Parenting Styles

Parenting styles involve a combination of parenting practices within a parent that impact child development significantly, as opposed to analysing individual practices or dimensions separately (e.g., Baumrind, 1971; Maccoby & Martin, 1983). It describes the emotional atmosphere shaped by parental attitudes during the parent-child socialisation process (Darling & Steinberg, 1993). Traditionally, two orthogonal dimensions of parenting behaviour underlie research on parenting styles (Baumrind, 1971; Maccoby & Martin, 1983). Parental warmth (or responsiveness) refers to the degree of positive affection and support present in parent-child relationships, while parental control (or demandingness) refers to a parent's degree of verbalisations and behaviours intended to modify their child's thoughts, emotions, and behaviours. Based on behavioural differences in the dimensions of warmth and control, there exist four distinct parenting styles, including authoritarian parenting, permissive parenting, uninvolved parenting, and authoritative parenting (Hoffnung et al., 2015).

First, the authoritarian parenting style is characterised by low parental warmth and high parental control (Baumrind, 1971). Authoritarian parents set clear expectations of their child and grant little to no autonomy. The parental rules implemented are not debated and viewpoints of their children are disregarded. Second, the permissive parenting style is characterised by high parental warmth and low parental control (Baumrind, 1971).

Permissive parents consider themselves a resource for their child, thus do not actively attempt to control them. These parents believe fulfilling every desire of their children and obeying their wishes is the best way to express love. Third, the uninvolved parenting style is characterised by low parental warmth and control. Uninvolved parents rarely engage with their children and may neglect their needs, often viewing their children as burdensome (Baumrind, 1971).

Fourth, the authoritative parenting style is characterised by high parental warmth and control. Authoritative parents actively engaged in their child's life while still respecting their individuality. These parents hold high expectations for their children but are often willing to rationalise the expectations and allow for negotiations (Cho et al., 2020). The authoritative parenting style has been associated with a variety of adaptive child outcomes including greater academic success (Steinberg et al., 1992), self-regulation, and social responsibility (Baumrind, 1991). Research has identified authoritative parenting as optimal across different cultures (Steinberg, 2001). While parenting styles are still primarily understood in the context of the Baumrind's (1971) dimensions and styles today, the advent of instant messaging and social media has led to focusing on a new style of parent-child interactions (LeMoyne & Buchanan, 2011).

Helicopter Parenting

Unlike earlier generations, parents today have access to handphones, likened to an 'electronic umbilical cord (p.400)', to constantly check on their children's activities (LeMoyne & Buchanan, 2011). In the 1990s, 'helicopter parenting' (HP), also referred to as overparenting (Winner & Nicholson, 2018), emerged as a term to describe overinvolved and risk-averse parents who micromanage their children's lives (Cullaty, 2011; LeMoyne & Buchanan, 2011; Segrin et al., 2012). The term illustrates how parents, akin to helicopters, figuratively hover over their children, ready to intervene and shield them from distressing

situations (Cline & Fay, 2020; Fingerman et al., 2012). In the context of Baumrind's parenting styles, both helicopter and authoritarian parents are actively involved in promoting their children's success, yet HP is particularly problematic in fostering autonomy. HP is also similar to authoritative parenting in that they are both warm and controlling but are significantly more controlling and less autonomy-granting (LeMoyne & Buchanan, 2011; Padilla-Walker & Nelson, 2012). This observation underscores HP's autonomy restriction (Soenens & Vansteenkiste 2010; Vansteenkiste & Ryan, 2013). Although HP shares similarities with various parenting styles, Segrin et al. (2012) noted its distinct characteristics that set it apart; these include risk aversion, a preoccupation with the child's happiness, and the drive to problem solve for them.

According to self-determination theory (SDT), autonomy is the ability to make individual decisions and govern oneself without coercion (Collins, 1990). It is one of three basic psychological needs (i.e., autonomy, competence, relatedness) central to an individual's optimal development and functioning (Deci & Ryan, 2008). Many studies have documented the benefits of autonomy-supportive parenting such as greater well-being (Deci & Ryan, 2008), motivation, academic achievement, and the fostering of independence to navigate systems, including higher education (Froiland, 2011; Su & Reeve, 2011). Conversely, in demonstrating excessive control over their children's lives, HP fails to allow for levels of autonomy suitable to their children's age (Segrin et al., 2012). Constant intervention signals to children that they are incapable of overcoming their own challenges and thus require continuous protection from the world's dangers (Cline & Fay, 2020). SDT is widely used in overparenting research because it emphasises basic psychological needs as key explanatory mechanisms through which overparenting affects children's adjustment (Cui et al., 2022; Shin & Adame, 2024). It argues HP harms individuals by undermining their sense of

autonomy and competence, consequently affecting their relatedness with parents and others (Vigdal & Brønnick, 2022).

Three other theories accentuate the individuation process, which involves developing a sense of self separate from the family unit. First, the Circumplex Model of Family Systems emphasises balanced levels of cohesion and flexibility are crucial for fostering individuation and promoting healthy family dynamics (Olson, 2000). However, HP is characterised by high cohesion and low flexibility, thereby hampering individuation (Givertz & Segrin, 2014). Second, the Family Differentiation Theory elucidates how family dynamics shape the healthy balance between intimacy and individuality in children (Bradley-Geist & Olson-Buchanan, 2014). In the case of HP, blurred parent-child boundaries hinder children's ability to establish individuality, leading to cognitive, behavioural, and emotional challenges that may extend into later stages of life. Third, the Family Systems Theory posits that healthy separation and individuation from parents involve renegotiating the parent-child relationship to balance closeness and distance (Bowen, 1976; Grotevan & Cooper, 1998). Overinvolvement characteristic of HP thus undermines self-control and psychological well-being, leaving individuals unprepared for adulthood (Padilla-Walker & Nelson, 2012; Spokas & Heimberg, 2009; Ungar, 2009).

Consequences of HP in Youthhood

While HP could theoretically manifest at any developmental stage, it is frequently associated with parents of emerging adults due to the perceived benefits of granting more autonomy during this period (Darlow et al., 2017; Segrin et al., 2012). Synonymous with youthhood, this developmental stage spans from ages 18 to 29, bridging the gap between of self-exploration and self-reliance, which HP interferes with (Kouros et al., 2017). Although of benevolent intention to ensure the well-being of their children, helicopter parents unintentionally interfere with the crucial development of autonomy (Spokas & Heimberg,

2009). This compromises their ability to make independent decisions (LeMoyne & Buchanan, 2011) and, in turn, impedes their efficiency in navigating through day-to-day social demands and challenges (Spokas & Heimberg, 2009). It has been previously reported that poor parental fostering of autonomy leads to problems with social adjustment in higher education institutes and greater levels of alienation from college peers (van Ingen et al., 2015). Hence, it can be argued that helicopter parents who have trouble relinquishing control of their children's lives are disrupting the customary individuation process required of adults.

In the past decade alone, a robust body of research has produced compelling findings demonstrating the deleterious impact of HP on youths. Examples of the maladjustment resulting from HP includes its negative association with life satisfaction (Schiffrin et al., 2014), resilience and coping (Hall et al., 2021; Odenweller et al., 2014), self-control (Love et al., 2020), adjustment to college (Darlow et al., 2017; Luebbe et al., 2018), self-efficacy (Darlow et al., 2017; Hwang & Jung, 2021; Reed et al., 2016), self-regulation (Perry et al., 2018), academic outcomes and functioning (Howard et al., 2019; Luebbe et al., 2018; Schiffrin & Liss, 2017), and social and relational issues (Jiao & Segrin, 2021). HP has also been positively associated with depression and anxiety (Luebbe et al., 2018; Schiffrin et al., 2014; Vigdal & Brønnick, 2022), alcohol and substance use (Cui et al., 2019), dependent and avoidant decision-making (Luebbe et al., 2018; Odenweller et al., 2014), academic burnout (Love et al., 2020), and maladaptive perfectionism (Hayes & Turner, 2021). The burgeoning evidence that HP is mostly detrimental intensifies the need to empirically examine its underlying factors, potential consequences, and the contexts in which it occurs further.

While HP is often perceived negatively, its benevolent intent and positive aspects are often overlooked (Kwon et al., 2017). Shaki et al. (2022) note helicopter parents prioritise the safety of their children, support academic endeavours, and actively engage in school activities, leading to enhanced facilities and increased student participation. Others have

found HP is not detrimental to youths' success (Earle & LaBrie, 2016) and emotional well-being (Fingerman et al., 2012). In addition, Padilla-Walker and Nelson (2012) found that HP is positively associated with guidance and emotional support, facilitating positive parent-child relationships and communication. Notably, Earle and LaBrie (2016) have effectively leveraged helicopter parents to mitigate student alcohol-related risk, suggesting HP represents a potential new avenue to foster healthier habits among youths. The conflicting findings of HP outcomes may be attributed to the larger sociocultural contexts, such as cultural values and belief systems (Harrison et al., 1990).

Cultural Context of HP

Children perceive parenting beliefs and practices according to their cultural backgrounds (Bornstein & Cheah, 2006; Chao & Tseng, 2002; Cheung & Lim, 2022). Notably, research has long suggested that while Western cultures prioritise individualism, Eastern cultures place more value on collectivism and familism (Chao & Tseng, 2002; Nelson et al., 2011). This dichotomy extends to parenting styles, with Western approaches prioritising children's independence and autonomy while Eastern parenting emphasises self-sacrifice for the common good of families and communities. Although Western parents actively support their children through resource provision, excessive interference strains parent-child relationships (Nelson et al., 2011). Conversely, in Eastern cultures, developmentally inappropriate involvement may be perceived as continuing traditional parenting practices (Cheung & Lim, 2022), leading to a distinct interpretation of HP among youths (Chao & Tseng, 2002). Coherently, past research suggests that HP may be ingrained in some Asian cultures (e.g., Korea and China) that are characterised by Confucian values emphasising parental authority and intergenerational harmony (Hwang et al., 2022b; Kwon et al., 2017; Lee & Kang, 2018; Zong & Hawk, 2022). In these cultures, parental overinvolvement in children's social and academic lives may be perceived as appropriate.

Coherently, Cheung and Lim (2022) suggest children better grasp the intentions behind strict parenting and control in Asian cultures that emphasise parental authority. Hence, it is essential to consider contextual factors, such as culture, when assessing the functional value of parenting styles.

Existence of HP in Asian Societies

Asian parents hold authority within families and remain responsible for their children's achievements well into adulthood (Chao & Tseng, 2002). Parenting in Confucian cultures typically involves a concurrent exercise of high control and intensive support (Leung & Shek, 2018), which forms two independent domains of HP if exercised at an extensive level (Padilla-Walker & Nelson, 2012; Rousseau & Scharf, 2015). The cultural norms and expectations of filial piety, a Confucian value, mandate children to show respect, obedience, and devotion to their parents in gratitude for their upbringing (Yeh & Bedford, 2003). Filial piety socialises children to appreciate their parents' involvement and control (Yoo & Liu, 2014) regardless of how excessive it is (Lee & Kang, 2018). In demonstrating their reverence for parents, Asian youths typically perceive controlling parenting behaviours as an expression of care (Chen-Bouck & Patterson, 2017; Leung et al., 2018; Park & Chesla, 2007). Moreover, a strong adherence to filial piety encourages youths to live with their parents until they marry (Yeung & Alipio, 2013). This undeniably presents itself as an obstacle to attaining the autonomy that youths require, accentuating the adverse consequences that Asian youths experience in combination with HP. This may explain why the potential for practicing HP inherently exists in Asian societies.

There is a notable emphasis on personal achievement and academic performance in Asian societies (Kwon et al., 2017). In the context of Confucianism, where children are often perceived as extensions of their parents and their achievements are seen as family honour instead of individual accomplishments, parents become increasingly involved in their

children's academic lives. Consequently, a consensus may have formed about HP being an acceptable strategy for ensuring the success of youths in Asia (Hwang et al., 2022b). The excessive emphasis on academic success often neglects the development of other essential aspects of youth, such as social skills and socioemotional development (Kwon et al., 2017; Ma et al., 2018). However, in contrast to the negative effects in the West, Asian youths view HP as potentially beneficial for academic performance and career development (Kwon et al., 2017). This further signifies that HP is widely regarded as both essential and customary in Asian societies.

Sculpting Perspectives: Singapore's Cultural Canvas. Singapore is a small city-state located in the Southeast Asia region (Bellows, 2009). Often described as a First World, Singapore is a developed nation and its success is attributed to its strategic geographical location and effective governance. The Ministry of Education released a series of illustrations deterring parents from adopting HP (Ministry of Education, 2017) while a rising number of schools have taken actions against helicopter parents in an attempt to foster independence among its students (e.g., notices are put up at entry points of schools to discourage parents from delivering their children's forgotten item[s]; Sin, 2017). While it is evident that HP exists in Singapore (Ministry of Education, 2017; Sin, 2017), it is important to explore the underlying reasons that contribute to its prevalence. The prevalence may be attributed to a combination of factors, including filial piety, *kiasuism*, and its meritocratic society, which will be discussed in the following sections.

Filial Piety. Filial piety is used to connote parental obligation in many Asian cultures, including the three dominant cultures in Singapore: Chinese, Indian, and Malay (Li et al., 2021). Among the Chinese, 'Xiao' emphasises the hierarchical family structure and the obligation of children to support and obey their parents, forming the core of familial ideology (Yeh & Bedford, 2003). The Malays manifest filial piety as 'Ketaatan Kepada Ibu Bapa'

emphasising loyalty and obedience to parents (Tan et al., 2019). Among the Indians, the concept of ‘Seva’ embodies intergenerational reciprocity and care, reflecting the devotion of children to their parents, often within joint family systems (Sharma & Kemp, 2012). In addition to the individual cultural underpinnings, The Singapore government reinforces filial piety through the Maintenance of Parents Act (Singapore Statutes Online, 1995), which requires children to support their parents if they are unable to do so themselves (Rozario & Hong, 2011). Furthermore, one of five shared values adopted to guide the nation's development was the recognition of ‘family as the fundamental unit of society’ (Prime Minister’s Office, 1991), implying that filial obligations are deeply ingrained in Singaporeans. Taken together, the strong emphasis on filial piety in Singapore may encourage dependency on parental guidance, inadvertently fuelling HP behaviours.

Kiasuism. Kiasu is a quintessential Singaporean trait that underlies attitude toward all aspects of life including education and work (Bedford & Chua, 2018; Cheng & Hong, 2017; Cheng & Wee, 2023; Devadas, 2018; Tan, 2015; Wee et al., 2022). An amalgam of Hokkien and Chinese languages, ‘kias’ characterises individuals with selfish attitudes driven by the fear of missing out or a strong desire to not lose out to others (Kirby et al., 2010). Examples of kiasu include pushing past people to get into a transportation mode first, piling the most expensive food item onto the plate at a buffet, delaying the traffic lane change to the last moment, rushing for store sales, and queuing overnight to guarantee their child’s successful placement in a prestigious school (Ho et al., 1998).

Individuals who endorse the kiasu mindset are constantly worried about securing their share from limited resources (Choi et al., 2022). According to Pierson (2019), Singaporeans embrace the kiasu culture to cope with the challenges of living in a small nation with scarce land and resources where extra efforts are required to sustain and safeguard their country from larger neighbouring countries. Although there is evidence of kiasu behaviours in

Australia (Ho et al., 1998; Ho et al., 2020), United States (Kirby et al., 2010; Kirby & Ross, 2007), and other Asian countries (Hwang et al., 2002), no other country identifies with *kiasu* as part of the national culture in the way that Singaporeans do. Cheng and Wee (2023) draw upon the situated dynamics framework (Leung & Morris, 2015) to suggest that cultural norms, personal beliefs, and situational cues interact to produce the highest cultural practice endorsement of *kiasu* in Singapore.

The self-regulatory focus theory outlines two distinct motivational systems, namely a promotion and a prevention focus (Higgins, 1997). The promotion system focuses on accomplishment and advancement (i.e., attaining gain). In contrast, the prevention system focuses on security and risk-aversion (i.e., avoiding loss). Despite typically endorsing a prevention focus (Cheng & Hong, 2017), *kiasu* individuals are not immune to shifts in their goals and motivations over time. The theory posits that promotion and prevention focuses are shaped by the situational context or the demands of the task at hand (Higgins, 1997). This suggests that even in cultures known for their strong emphasis on prevention-focused behaviours, individuals may experience a transition towards a promotion focus. The pressure to excel can prompt individuals to reassess their goals (Cheang & Choy, 2023). Thus, in competitive environments like Singapore, *kiasu* individuals may evolve towards actively pursuing gains and opportunities for growth. Drawing parallels, HP similarly encompasses prevention and promotion focus, striving to shield the child from harm while driving them towards success and advancement (Rousseau & Scharf, 2017).

Singapore's leading online parenting forum, KiasuParents.com, was created by and for parents to discuss their children's education, presenting an indictment of problematic Singaporean parenting practices (Debs & Cheung, 2021). *Kiasu* parenting describes ambitious and competitive parents who prioritise their children's success in examinations, aiming for prestigious schools and lucrative careers, often at any cost (Bach & Christensen,

2017). Göransson (2015) suggests that kiasu parenting is vital for preparing children to meet modern societal demands (e.g., academic achievement) that are often linked to the broader focus on human capital and national survival. While 'kiasu' may carry negative connotations, 'kiasu parenting' is often a symbol of Singaporean parents' dedication and sacrifices to ensure their children's future success (Debs & Cheung, 2021). Certainly, the phenomenon of kiasu parenting closely parallels the concept of HP. Akin to kiasu parents, helicopter parents are characterised by over-involvement in their children's lives, often micromanaging their academic pursuits and extracurricular activities to ensure success. Moreover, both parenting styles stem from a deep-seated desire to secure a prosperous future for their children. Ultimately, the prevalence of kiasuism in Singapore may contribute to the widespread adoption of HP.

Meritocratic Society. Singapore's meritocratic society empowers inherent competition in almost all facets of life (Ellis, 2014). Meritocracy serves as a governing principle in several Asian countries that are heavily influenced by Confucianism (e.g., Singapore, Korea, and China; Kim & Choi, 2017). It is grounded on the belief that regardless of race and social status, responsibility and diligence are the cornerstone for economic success (Cheang & Choy, 2023). This strong drive towards excellence has also been credited as a key contributing factor to Singapore's successful economic growth. The economic aspect of meritocracy in Singapore is closely tied to the endorsement of kiasuism, as evident in the cultural propensity for competitiveness to secure a superior economic status. Moreover, Christensen (2015) outlines that kiasu underpins Singapore's educational landscape, serving as the ultimate guarantor of one's economic standing, a foundation firmly rooted in the meritocratic ethic. Singapore's commitment to meritocracy proves unwavering as it continues to guide multiple policies in the country (Bellows, 2009).

Singapore's competitive education system is underpinned by the economic strategy of using highly educated human capital to compensate for its limited natural resources (Ng, 2017). In this sense, one could argue that educational competitiveness perpetuates kiasuism. Hwang et al. (2022b) note kiasuism in an academic setting manifests in students by withholding study notes, hiding reference books in the library, and pretending to study less than one does. While these actions may lead to unpopularity among peers (Kirby & Ross, 2007), kiasu students can outperform others by hoarding knowledge. Debs and Cheung (2021) revealed that competition in the education system begins with school choices. The competitive route to economic success in Singapore starts with securing a place in a top primary school (Ong & Cheung, 2016). However, the school choice system in Singapore (i.e., a six-tier enrolment preference including legacy benefit and parent volunteering) situates parents as victims of an unfair system that contradicts the meritocratic ideal of equal opportunity (Debs & Cheung, 2021). This structural privilege inherent in school choice systems may amplify HP behaviours as parents strive to navigate systemic inequities and secure the best educational opportunities for their children. Taken together, the inherent potential for HP in Singapore is shaped by its cultural emphasis on filial piety, the wide endorsement of kiasuism, and its meritocratic society.

Measuring HP

Many HP scales have predominantly focused on the presence of objective, parenting behaviours (LeMoyne & Buchanan, 2011; Padilla-Walker & Nelson, 2012; Schiffrin et al., 2014). However, Schiffrin et al. (2019) have argued that participants' subjective perceptions about their relationships are more important predictors of outcomes than objective measures. Coherently, Schiffrin et al. (2019) have developed a 10-item Consolidated Helicopter Parenting Scale (CHPS) that retains only two items that addresses objective behaviours. The CHPS was developed based on five existing HP scales (Bradley-Geist & Olson-Buchanan,

2014; LeMoyne & Buchanan, 2011; Odenweller et al., 2014; Padilla-Walker & Nelson, 2012; Schiffrin et al., 2014) and has demonstrated good reliability for both mothers (Cronbach's $\alpha = .92$) and fathers (Cronbach's $\alpha = .88$; Schiffrin et al., 2019). These reliability indexes are comparatively greater than Padilla-Walker and Nelson's (2012) Helicopter Parenting scale (Cronbach's $\alpha = .78$, indicating adequate internal consistency). Owing to growing awareness of differential effects of mothering and fathering (van Ingen et al., 2015), the CHPS allows for comparisons of both maternal and paternal HP models (Schiffrin et al., 2019). The CHPS thus supports a more gender-inclusive approach to parenting research. Taken together, the CHPS offers a better alternative to measure participants' perceived levels of HP as compared to Padilla-Walker and Nelson's (2012) Helicopter Parenting scale.

Schiffrin et al. (2021) is among the first to advocate for the use of CHPS in studies examining HP. Reliability analysis revealed relatively stronger reliability scores (i.e., maternal Cronbach's $\alpha = .93$ and paternal Cronbach's $\alpha = .88$) than the original study (Schiffrin et al., 2019). Consistent with prior research, mothers reportedly engaged in more HP than fathers (McGinley, 2018; Nelson et al., 2019). This further supports the need to separately examine maternal and paternal models of HP in parenting research. Moreover, controlling for the effects of one parent while modeling another allows researchers to determine if the associations, if any, are held constant (Allen, 2017). It is thus recommended that this thesis measures both maternal and paternal levels of HP and conducts covarying of effects for one parent when modeling the other.

Thesis Overview: Current Research Foci

The paradox of HP lies in its propensity to yield more negative outcomes than positive ones despite being likely enacted with benevolent intentions (Shin & Adame, 2023). Moreover, helicopter parents hinder the development of autonomy in their children despite being autonomous individuals themselves. Hence, delving deeper into HP's underlying

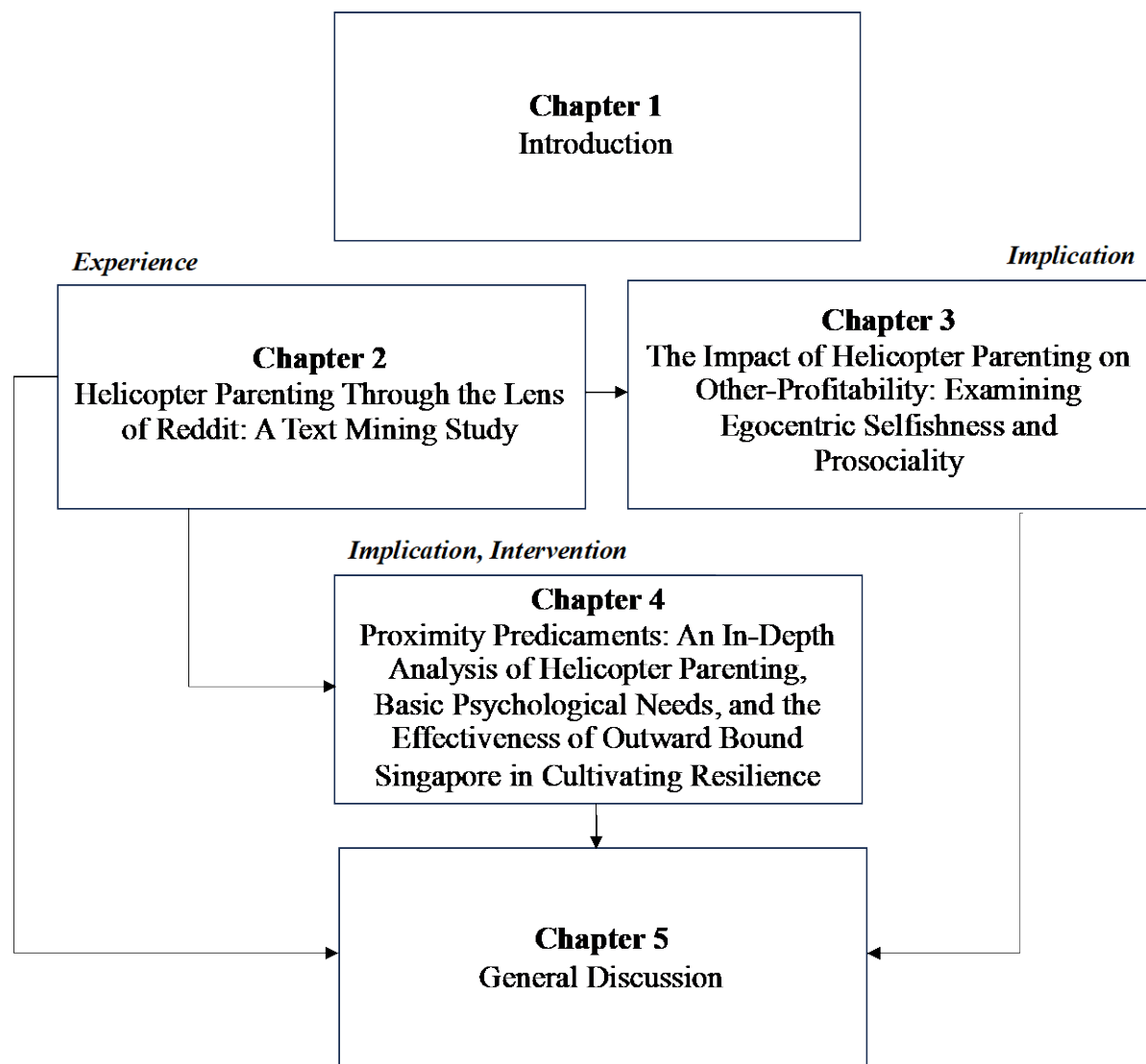
mechanisms and psychological impacts is imperative to unravel the complexities and implications of this phenomenon on both parental dynamics and child outcomes. Given the predominant focus on American settings in prior work (Cui et al., 2022), the substantial alignment of Singapore's unique cultural and societal values with HP prompts the question of why there is a dearth of empirical evidence supporting ministerial and educational efforts to deter parents from adopting HP (Ministry of Education, 2017; Sin, 2017). This warrants further investigation into the impact of HP on youths. While this thesis does not serve as a cross-cultural comparison between Eastern and Western cultures, its findings offer a preliminary, yet relatively comparable, understanding of how HP correlates with outcomes in a distinct cultural context such as Singapore.

HP is a complex phenomenon that encompasses a wide range of behaviours and their varied impacts on youth development. While empirical research is predominantly used to study HP (Kwon et al., 2017), a mixed-method approach is crucial to capture both the intricacies of individual experiences through qualitative data and the broader outcomes and correlations through quantitative measures. This dual perspective is essential for gaining a comprehensive understanding of how HP operates in different contexts and its multifaceted effects on youths. Therefore, the research question central to this thesis: 'How does HP impact youths?' necessitates a multi-method approach that considers both qualitative and quantitative data. The central aim of this thesis is to explore personal experiences, individual (for self) and societal (for other) implications, and intervention strategies. By scrutinising the lived experiences of individuals raised by helicopter parents, examining its broader impact on individual and societal well-being, and proposing targeted interventions for positive youth development, this research endeavours to contribute to a deeper understanding of the HP literature.

Chapter 2 analyses posts from the subreddit r/helicopterparents using text-analysis methods to uncover themes related to HP experiences. Chapter 3 cross-sectional surveys Singaporean youths to understand the implications of HP on positive (prosocial behaviour) and negative (egocentric selfishness) behaviours that affect the society. Chapter 4 conducts a pre-post survey to explore the implication of basic psychological needs (autonomy, competence, and relatedness) as a mediator in the relationship between HP and resilience, while also evaluating the effectiveness of the Outward Bound Singapore program in mitigating HP's negative effects. A conceptual diagram of the thesis is presented in Figure 1. The chapters are described next.

Figure 1.1

Conceptual Diagram of Thesis



Note. This conceptual diagram outlines the structure and flow of the thesis, which investigates the impact of HP on youths through a multi-method approach.

Chapter 2 employs Big Data techniques to analyse textual data from Reddit, focusing on the r/helicopterparents subreddit. Latent Dirichlet Allocation uncovers hidden themes to understand user experiences with HP ($N = 713$ posts). Chapter 2 has been published in a Q1 scholarly journal recognised in the Excellence in Research for Australia 2023 journal list (doi:10.1016/j.heliyon.2023.e20970). This chapter was funded by James Cook University Singapore's HDR Competitive Funding (Research Projects) 2021 and HDR Competitive

Funding (Publications) 2023, totalling SGD3,200. The research findings were presented on the following platforms:

- Keerthigha, C. (2022, September). *Helicopter Parenting Through the Lens of Reddit*. Paper presented at the JCU 3MT Final, online.
- Keerthigha, C. (2022, May). *Helicopter Parenting Through the Lens of Reddit: A Text Mining Study*. Paper presented at the AusAsian Mental Health Research Group Meeting, online.

Chapter 3 employs an online cross-sectional survey study to examine the impact of HP on other-profitable behaviours such as egocentric selfishness and prosocial behaviour ($N = 531$). The research findings were presented in part on the following platform, received special commendation, and were invited for publication in the special issue titled ‘Our Southeast Asia Indigenous Psychology’ within the International Perspective in Psychology journal, endorsed by the APA journal (Division 52: International Psychology):

- Keerthigha, C. (2021, December). *Helicopter Parenting and Kiasuism in Singapore*. Paper presented at The First Southeast Asian Indigenous Psychology Scientific Meeting, online.

Chapter 4 involves a pre-post survey study ($N = 116$) that examined the mediation effect of basic psychological needs on the relationship between HP and state-trait resilience and the intervention effectiveness of the Outward Bound Singapore programme in improving resilience. The inclusion of intervention strategies is critical, as it not only addresses the immediate effects of HP but also offers practical solutions for mitigating its negative outcomes and fostering positive youth development. This approach ensures a robust theoretical framework that connects the lived experiences of individuals with actionable strategies, thereby enhancing the overall contribution to HP literature. The two studies covered in this chapter were supported by the National Youth Council Singapore, Outward

Bound Singapore, and Republic Polytechnic. Research funds were received by James Cook University Singapore HDR Competitive Funding (Research Projects) 2022 and National Youth Fund (Research Grant) 2022, totalling SGD8,640.

Chapter 5 presents the general discussion of the main findings and deliverables of the overall thesis. It will highlight the implications, limitations, and recommendations for future research from this thesis.

Chapter 2

Helicopter Parenting Through the Lens of Reddit: A Text Mining Study

Social media is gaining ground in our everyday life. Online communication and sharing on these platforms (e.g., Facebook, Twitter, and Instagram) often provide information about our psychological characteristics, attitudes, and behaviours (Harlow & Oswald, 2016). The availability of social media data provides researchers with opportunities to gain deeper insights into users' social behaviour in an uncontrolled setting (Marengo et al., 2019). Assessing big data thus allows the unobtrusive analysis of trends and patterns that are specific to a particular issue. The present study examines data from the social media platform Reddit. Reddit users (N = 430,000,000; Statista, 2022) subscribe to user-created discussion groups termed 'subreddits' that often reflect specific interests (e.g., r/baking and r/dogs) and experiences (e.g., r/depression and r/mindfulness). Reddit's anonymous user identity allows for free responses without inhibition (Proferes et al., 2021). This enables the collection of sensitive and meaningful information to create an accurate map of users' experience with helicopter parenting (HP) in the present study. Posts from the subreddit r/helicopterparents are analysed using computational linguistics and qualitative synthesis. It is anticipated that findings contribute to the ongoing research on the impact of HP among emerging adults.

Helicopter Parenting

Parallel to helicopters that swoop in to rescue at the first sign of trouble, helicopter parents are characterised by their distinct style of parental overinvolvement and micro-management (Cullaty, 2011; LeMoyne & Buchanan, 2011; Segrin et al., 2012). HP commonly referred as overparenting, describes parents who exhibit high involvement, control, and autonomy-limiting behaviours toward their child (Winner & Nicholson, 2018). Behaviourally, these are expected to manifest in an increase in advice and other directive behaviours, an attempt to shield the child from negative outcomes, instrumental support, and

a preoccupation with the child's happiness (Segrin et al., 2012). Examples of HP include problem-solving and decision-making for their children, and intervening in their affairs (Locke et al., 2016; Padilla-Walker & Nelson, 2012). The cause of HP is yet to be fully understood with recent studies suggesting parental anxiety and regret (Rousseau & Scharf, 2018; Segrin et al., 2013), culture (Hwang & Jung, 2022; Kwon, 2017), and parent-child gender combinations (Love et al., 2020a; Nelson et al., 2021; Schiffrin et al., 2019a) as strong contributing factors to HP.

HP has been primarily studied in the emerging adult population, which refers to the phase of life between adolescence and adulthood (typically ages of 18 to 29; Arnett et al., 2014). During this transitional period, individuals experience a growing need for autonomy, whereby their decisions are guided only by personal preferences (Darlow et al., 2017; Hwang & Jung, 2022). However, HP tends to impede autonomy development. Emerging adults encounter a multitude of stressors, such as identity and relationship formation and those with helicopter parents may face even greater difficulties in this stressful climate.

Insights from advanced imaging technology have demonstrated the structural and functional changes of the brain during the transitional period of development (Lenroot & Giedd, 2006) and how it relates to social cognition. Social cognition refers to the ability to infer and reason, which plays a critical role in the successful negotiation of complex social interactions and decisions (Kilford et al., 2016). Coherently, research has shown HP exacerbates poor social adjustment and greater levels of alienation from college peers (van Ingen et al., 2015). Reports from emerging adults also indicate HP may foster a family and social environment that impairs their relationship with others (Segrin et al., 2012).

There is a significant amount of evidence linking high levels of anxiety, depression, low life satisfaction, and poor psychological well-being to HP (Kouros et al., 2017; LeMoyne & Buchanan, 2011; Schiffrin et al., 2014; Segrin et al., 2012; Willoughby et al., 2013).

Identifying and addressing the sources of distress among emerging adults has become paramount to practitioners, higher education institutions, and families (Douce & Keeling, 2014). As emerging adults increasingly take to sharing their distress on social media, a growing body of research focuses on such self-disclosures as an unobtrusive way to uncover the hidden or suppressed views of their adversities and how it affects them (Yeo, 2021).

Mining Social Data

With the advent of social media, online communities have emerged to provide help, advice, and support for those who share similar experiences (Huh & Ackerman, 2012). Perceived support in these communities plays a prominent role in improving mental health by reducing stress (Nabi et al., 2013), increasing self-efficacy (Kim et al., 2020), and fostering positive behaviour changes (Munson et al., 2010). Most online platforms allow their users to post anonymously, providing a sense of security to discuss their experiences without the fear of being stigmatised or discriminated against (Balani & De Choudhury, 2015; Berry et al., 2017; Highton-Williamson et al., 2015). Notably, social media facilitates communication among its users and produces a colossal amount of social data (Choi et al., 2015).

Social data is mined through text mining, an artificial intelligence technology that attempts to extract meaningful information from unstructured textual data (He et al., 2013). The data is automatically indexed in specific ways (e.g., via common schemas) to create models which explain patterns and trends. Researchers have used this technology to analyse large amounts of textual data in business (Ingvaldsen & Gulla, 2012), health science (He et al., 2013), and educational (Abdous & He, 2011; Hung, 2012) domains. They have also leveraged data to investigate human behaviour and interaction (Barbier & Liu, 2011). These have collectively provided solutions to real-world problems such as the detection of depression (Tadesse et al., 2019), childhood sexual abuse (Wan et al., 2019), and suicidal ideation (Coppersmith et al., 2018).

Recent text mining applications have allowed social scientists to observe natural online behaviour, gaining deeper insights into users' real-time psychosocial characteristics (Marengo et al., 2019). Natural Language Processing (NLP), a subfield of Artificial Intelligence, is an emerging technology that uses machines to understand human languages (Nanomi Arachchige et al., 2021). According to Kang et al. (2020), the NLP process comprises the following steps: (a) text preprocessing, in which the dataset is cleaned by removing non-textual information (e.g., emojis, images, and HTML tags); (b) text representation, where the dataset is transformed into word vectors; (c) model training, during which algorithms are utilised to train a model (e.g., sentiment analysis, opinion mining, or topic modeling); and (d) model evaluation, where the model is evaluated to ensure it has optimal generalisability to other corpora.

The use of NLP in psychological studies requires the text corpus to be processed according to vocabulary (Schwartz et al., 2013). An open-vocabulary approach does not rely on a priori word or category judgments (Grimmer & Stewart, 2013; Park et al., 2015). Instead, it aims to identify distinct sets of linguistic features (e.g., words, n-grams, and topics) in the corpus. In contrast, a closed-vocabulary approach is based on theoretical and empirical evidence on linguistic features (Holtgraves, 2011). This typically involves using word dictionaries that match words with a target psychological variable (e.g., anxiety, disgust, and happiness). Taken together, NLP offers social science a novel approach to data analysis which, in turn, creates accurate maps of a phenomenon.

The complexity of HP (Odenweller et al., 2014) necessitates more nuanced and in-depth examination through various scholarly inquiries such as text mining publicly available social data. Furthermore, despite the vast amount of literature on the adverse impact of HP on emerging adults (Carr et al., 2021; Hayes & Turner, 2021; Hwang & Jung, 2022; Padilla-Walker et al., 2021), more significant effort is warranted to understand their negative

experiences through first-hand perspectives and words (Kwon et al., 2017). This eliminates the disparities between lived experiences and their accounts, thus allowing authentic communication of their problems.

The Present Study

Given that research on HP has heavily relied upon empirical research (Kwon et al., 2017), the present study aims to understand Reddit users' experience with HP using NLP techniques, particularly its open-vocabulary approach. In this paper, a social media platform that discusses user experiences with helicopter parents (r/helicopterparents) will be examined. This serves as an attempt to contribute to the ongoing efforts to amalgamate both the distinct fields of psychology and computational linguistics research. It is thus anticipated that this study will make novel, scholarly contributions to the existing literature on HP. Due to the exploratory nature of this study, a research question (RQ), rather than an a priori hypothesis, is employed.

RQ: What are Reddit users' experiences with HP?

Method

Research Design and Participants

A Big Data approach was used to extract and analyse textual data from an online forum, Reddit. This study used secondary data thus, no participants were recruited. Reddit users are typically between the ages of 18 and 29 years (Sattelberg, 2021), thus assumed emerging adults.

Ethical Considerations

Ethical clearance for the study was granted by the Human Research Ethics Committee James Cook University, Australia (Ref. H8491; Appendix A). There are no formal guidelines in the National Statement on Ethical Conduct in Human Research (National Health and Medical Research Council, 2018) about Big Data approaches. Hence, the study adhered to

the recommendations of Landers et al. (2016) and Krotov and Silva (2018) for best practices (Appendix B).

Corpus

The corpus was based on r/helicopterparents, a subreddit that discusses user experiences with HP. Reddit (<http://www.reddit.com>), is a popular online social networking and news exchanging platform. Reddit is largely based on threaded conversations which are common communication patterns that effectively capture information on a particular topic (Choi et al., 2015). Reddit has multiple publicly available subreddits which are topically focused sub-communities. In these subreddits, users bring up conversations by sharing their experiences while others can choose to respond to the thread. As of 24 January 2022, r/helicopterparents has been active for approximately seven years with 15,118 members.

Data Acquisition

The corpus was constructed using Reddit's official Application Programming Interface (API; Reddit, 2021), called the Python Reddit API Wrapper (PRAW; Boe, 2021). An API is a software intermediary that enables data transmission between one application to another without compromising underlying implementation (Meng et al., 2018). PRAW is designed to respect all of Reddit's API rules. Data extraction of posts from 11 November 2014 to 24 January 2022 was conducted in compliance with Reddit API Terms of Service (Reddit, 2021). The API was instructed to eliminate the usernames and titles of the posts while collecting texts for the corpus. Only textual data found in the body of the posts were extracted. Responses to the original posts were not included in the corpus as this study aimed to identify common experiences with helicopter parents rather than describe the conversations surrounding these situations. Therefore, a total of 713 original posts across all threads were retained.

Data Pre-Processing

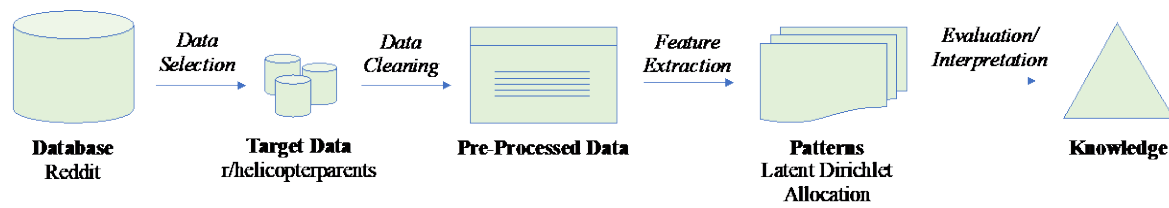
The corpus was prepared for analysis using the Natural Language Toolkit (NLTK; Loper & Bird, 2021) on Python 3.9.5. The NLTK provided a collection of text processing libraries such as lowercase conversion, tokenization, stop-word removal, and punctuation removal. Stemming was also applied to reduce words to their root form and group them by similarity. Web addresses and Unicode characters (e.g., symbols and emojis) were automatically removed. These collectively helped eliminate noise and correct inconsistencies in the data, transforming unstructured texts to tidy formats. The pre-processed data was used to produce basic corpus statistics (i.e., time series and n-gram analyses) and extract topics.

Feature Extraction

The present study used latent Dirichlet allocation (LDA), an open-vocabulary feature extractor to study the corpus (Blei et al., 2003). LDA uses the Bayesian probabilistic modeling method to extract a set of topics from a corpus of text. Specifically, LDA generates estimates of words associated with each topic (i.e., word-topic probabilities) and estimates of topics describing the document (i.e., document-topic probabilities; Bittermann & Fischer, 2018). Inspecting the highest word-topic and document-topic probabilities allows the identification of the theme of each latent topic. Furthermore, the unsupervised learning algorithm of LDA reduces researcher bias in selecting keywords, generating topics, and ranking topic prevalence in the document (Westrupp et al., 2022).

Qualitative Synthesis

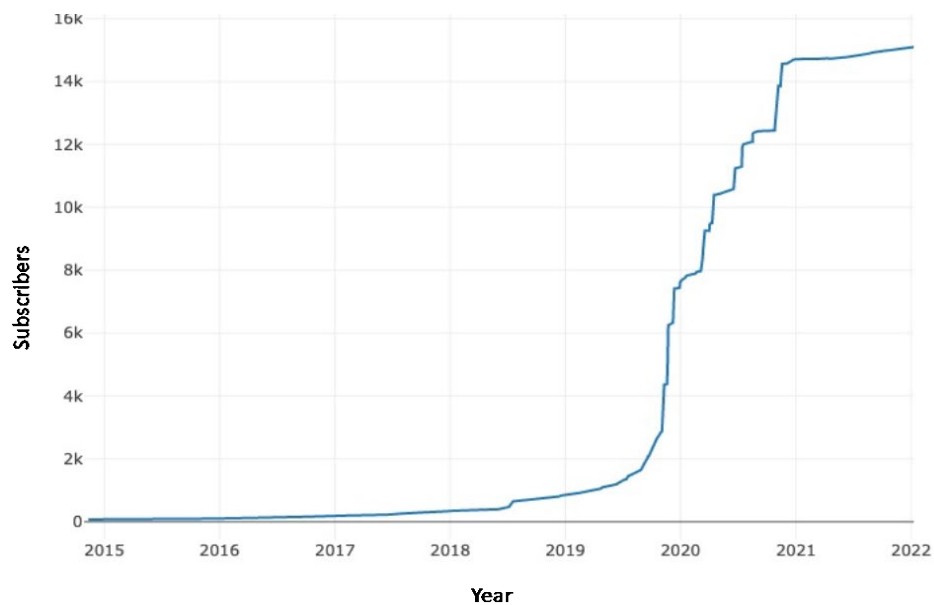
A qualitative approach was employed to contextualise the LDA model. This approach relied on the manual, in-depth interpretations of topics from authors, which allows for exploratory analysis of the findings. Each set of topical words was collectively assigned meanings, inductively developing themes for the latent topics generated by machine algorithms. Figure 2.1 illustrates the methodological framework used in this study.

Figure 2.1*Methodological Framework of Present Study*

Note. The process consists of data selection, data cleaning, feature extractions, and evaluation and interpretation of results.

Results**Corpus Statistics**

According to Subreddit Stats (n.d.), a series of uptrends in the subscriber count were observed since late 2019. Figure 2 illustrates the subscription rate for the subreddit r/helicopterparents.

Figure 2.2*Subscription Rate for the Subreddit r/helicopterparents*

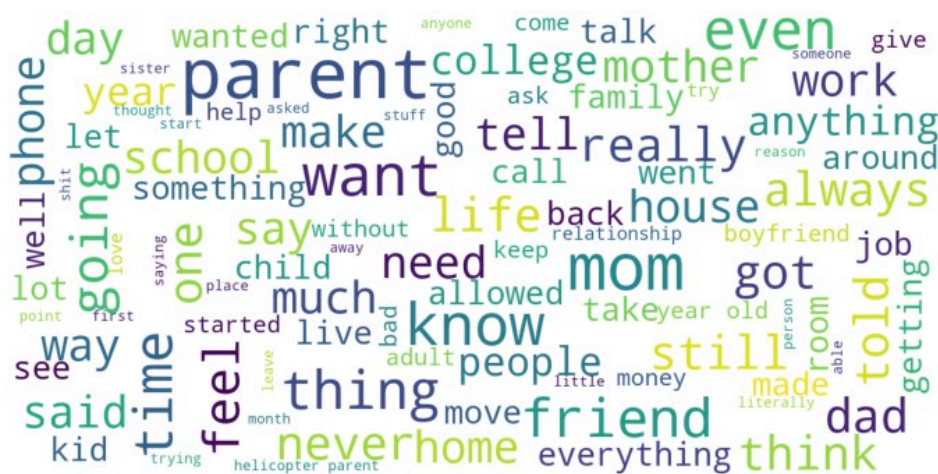
Note. A rapid increase in the number of subscribers is observed since late 2019.

Unigram Analysis

The top 100 most frequently occurring unigrams are presented in a word cloud (see Figure 2.3). The more prominent a word appears in the corpus, the bigger its representation in the word cloud. Findings consistently revealed the terms ‘mother’ and ‘mom’ as the most frequently used word in the data.

Figure 2.3

Visualisation of Unigram Frequency



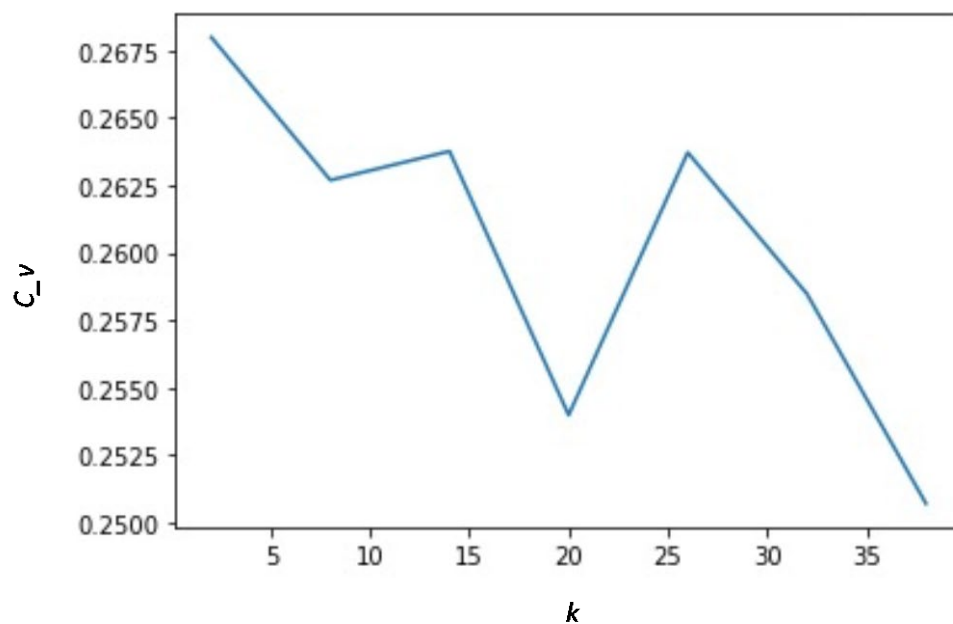
LDA

Hyperparameter Tuning

Topic coherence measures the degree of semantic similarity between high-scoring words in a dataset (Chang et al., 2009) which is essential for human interpretation of topic models. Therefore, Gensim’s *coherencemodel* was imported to evaluate topic models (Řehůřek, 2021). Figure 4 outlines the optimal number of topics against the coherence score with a fixed alpha of .01 and beta of 0.1. The maximum coherence score of 0.26 was achieved when the number of topics was set to four.

Figure 2.4

Determining the Optimal Number of Topics based on Topic Coherence Score



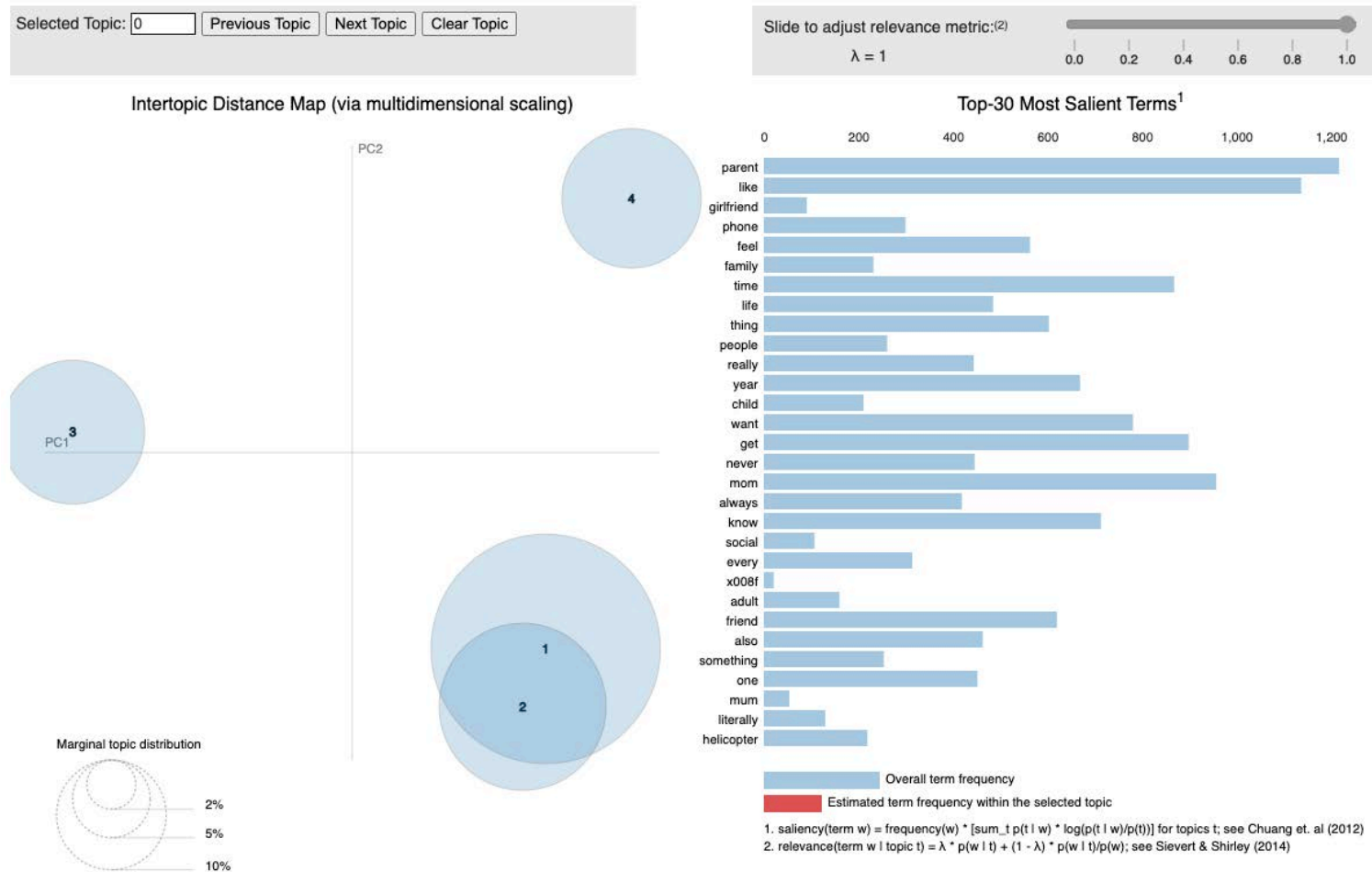
Note. The optimal number of topics (k) vs coherence score (C_v) is presented.

Topic Model Visualisation

Gensim's *pyLDAVis* was imported to produce an interactive visualisation of topics (Mabey, 2015). Figure 5 shows the topic model visualisation of the present study. While each bubble represents a topic, the more prevalent a topic is, the bigger its representation. Overlapping bubbles indicate similarities while the words listed on the right panel represent the top 30 most salient keywords found in the dataset.

Figure 2.5

Topic Model Visualisation Using pyLDAVis in Gensim with four Topics



Note. The bubbles illustrate overall topic distribution while the bars represent overall word frequencies.

Each topic is represented by its top 30 most salient and frequent keywords. Table 2.1 summarises the most representative words correlated with each topic as generated from the dataset and its corresponding themes.

Table 2.1

Summary of Topic Words and Corresponding Themes

Topic No.	LDA Topical Words	Topic Themes	Description of Themes
1	<i>mom, time, friend, school, home, house, life, dad, college, work</i>	Environmental Contexts	School, college, work, and home are environmental contexts in which users are exposed to HP behaviours the most.
2	<i>time, mom, friend, life, home, school, room, mother</i>	College Decisions	Users' choice of friendship, school, accommodation, and lifestyle are limited by helicopter parents.
3	<i>time, life, friend, mom, school, people, child, phone, family</i>	Invasion of Privacy	Helicopter parents closely monitor users' activities, both online and offline.
4	<i>mom, time, friend, phone, home, family, dad, girlfriend</i>	Social Relationships	HP interferes with users' social lives with family members and romantic partners.

Note. Four unique but broadly defined experiences that users face with helicopter parents were identified through manual interpretation of the topical words.

Discussion

This paper sought to understand Reddit user experience with HP by identifying common experiences shared by users with helicopter parents. The key findings revealed four main domains, including the common environmental contexts of HP (i.e., school, college, work, and home) and its implication on college decisions, privacy, and social relationships. The following sections will first discuss these specific impacts of HP and its implications for emerging adults. Next, highlight the study's overall contributions, limitations, and directions for future research.

Environmental Contexts

The data suggest that places such as school, college, work, and home are environmental contexts in which Reddit users are exposed to HP behaviours the most. This is in line with research that indicates helicopter parents readily intervene in their children's affairs with peers, professors, and employers (Locke et al., 2016; Padilla-Walker & Nelson, 2012). Given that autonomy is a key characteristic of the emerging adulthood developmental period (Arnett et al., 2014), parents who impose excessive restrictions may imply a lack of faith in their children's ability to navigate situations independently. An autonomy-restrictive parenting style, such as HP, may negatively impact an individual's psychological well-being and ability to adjust in college or work settings (Etkin et al., 2021). Therefore, it is crucial to provide developmentally appropriate levels of autonomy suitable to their children's age.

Loss of Control over College Decisions

The data suggest that HP poses control over users' college decisions and this is manifested in terms of a lack of control over peer relationships, school, accommodation, and lifestyle choices. This is consistent with past findings that suggest HP is related to a host of negative outcomes in college, including poor academic achievement, self-esteem, life satisfaction, and peer relationships (Kim et al., 2013; Odenweller et al., 2014; Padilla-Walker & Nelson, 2012; Schiffrin et al., 2014; Segrin et al., 2015; van Ingen et al., 2015). For example, peer relationships are central to emerging adulthood as they offer significant provisions such as support, security, and companionship in times of stress (Barry et al., 2016). The quality of peer relationships has been linked to self-esteem, prosocial behaviour, life satisfaction, and scholastic competence (van Ingen et al., 2015). This suggests that peer relationships play a pivotal role in remedying the ill effects of HP. It is thus proposed that colleges actively create opportunities for students to connect with peers and assist students in

the arduous task of establishing healthy boundaries with helicopter parents by encouraging individual decision-making.

Invasion of Privacy

The data suggest that helicopter parents supervise users both online (e.g., usage of the phone) and offline (e.g., people they meet), thus directly invading privacy. This is in line with previous research that highlights the association between HP and excessive parental monitoring (Hong et al., 2015). HP stunts youth disclosure and parental knowledge (Rote et al., 2020), which may in turn lead to youth relational aggression (Gaertner et al., 2010) and internalising problems (Rodríguez-Meirinhos et al., 2020). Although HP may have legal ramifications related to privacy rights (Cutright, 2008), research on privacy management by helicopter parents remains largely unexplored. Hammonds (2015) found that open communication among family members predicted the likelihood of emerging adults revealing private information to their parents. This suggests that privacy invasion is counterproductive to parents' efforts to remain knowledgeable about their children. Taken together, findings discourage excessive parental monitoring while encouraging enhanced family communication patterns (e.g., adopting autonomy-supportive parental monitoring strategies; Son & Padilla-Walker, 2022) and negotiations on privacy.

Impaired Social Relationships

The data suggest that HP interferes with users' social lives with family members and romantic partners. Research has shown that HP is strongly associated with emerging adults' insecure attachment to romantic partners (Jiao & Segrin, 2021) and stronger beliefs that being single is more advantageous than being married (Willoughby et al., 2015). According to Cook (2020), overparented emerging adults generalise their low self-efficacy to their dating incompetence. Moreover, HP may underlie attachment insecurity given that helicopter parents have constantly fed their children with attention, approvals, and reassurances which

may not be received in similar amounts from their romantic partners. That is, helicopter parents are inadvertently promoting long-term singlehood while preventing their children from having negative experiences (Willoughby et al., 2015). Therefore, it is recommended that helicopter parents consider autonomy-supportive parenting, which, in turn, may facilitate healthy relationship formation and maintenance.

Summary of Implications and Contributions

Reddit as an Inexpensive Source for High-quality Data

This study is among the first to elucidate the substantial potential of social data in understanding parenting outcomes. Empirical research has been often critiqued for impeding generalisability of findings due to social desirability bias exhibited by respondents (Krumpal, 2013) and experimental manipulations that may not be applicable in real-world settings (Innes & Morrison, 2021). In the present study, Reddit data offers the distinct advantage in obtaining candid qualitative responses (Amaya et al., 2021; Jamnik & Lane, 2017) which stand out as a strength compared to previous studies that are primarily reliant on questionnaires (Kwon et al., 2017). Reddit is also uniquely responsive to topic modelling, given that all its posts are publicly available unlike other social media platforms such as Facebook and Instagram (Westrupp et al., 2022). The abundance of social media data thus provides a valuable chance for researchers to address research inquiries in innovative manners.

Parental Gender Differences in HP

The result of analysis consistently revealed that the terms ‘mother’ and ‘mom’ were most frequently used in the data. This is in line with studies that have found mothers engage in more HP than fathers from the perspectives of parents (Fingerman et al., 2012; Rousseau & Scharf, 2015; Scharf et al., 2017), children (Fingerman et al., 2012; van Ingen et al., 2015), and college administrators (Somers & Settle, 2010). Notably, this study provides evidence

that in conditions where users are not restricted by the methodological choice of researchers, spontaneous responses revealed predominantly maternal models of HP. This suggests that HP is present among fathers albeit to a much lesser degree than mothers. Given HP manifests itself differently for mothers and fathers, there is merit in further examining gender differences in HP.

Parenting During the COVID-19 Pandemic

The results also showed a rapid increase in the number of subscribers of the subreddit r/helicopterparents since late 2019. In January 2020, the World Health Organization (WHO) declared COVID-19 a pandemic (WHO, 2020). A study by Chung et al. (2020) demonstrated the impact of COVID-19 on parenting stress, negatively impacting parent-child relationships. The series of uptrends in the subscriber count is parallel to parents working from home. This may be an indicator that HP is burgeoning in times of COVID-19. Research has also shown more salient effects of HP among students living with their parents as compared to those living away from their parents (Hong & Cui, 2020). Therefore, when conducting research during or in the aftermath of the COVID-19 pandemic, it is important to consider how the pandemic has affected different contents around the respondents, especially family relationships and its potential long-term effects.

Mindfulness as a Potential Solution

The present study offers the potential to tailor meaningful interventions for HP that are directly relevant to users' lived experiences. Practitioners can provide parent-focused prevention and interventions that emphasise the importance of parental autonomy support in mitigating the ill effects of HP (Hwang & Jung, 2022). Furthermore, the prominence of HP among mothers and the COVID-19 pandemic can become important targets for intervention. The effectiveness of mindfulness interventions has been extensively studied with parenting (Burgdorf et al., 2019; Chaplin et al., 2018; Coatsworth et al., 2014; Kil et al., 2021), the

pandemic (Bossi et al., 2022; Yeun & Kim, 2022), and emerging adults (Duprey et al., 2018).

Thus, mindfulness training poses a viable solution to the problems of HP.

Limitations and Future Directions

While this study is the first to provide insights from social data about HP, there are two notable limitations. First, the sociodemographic information of Reddit users is not publicly available (Amaya et al., 2021). Hence caution must be exercised when generalising the results of this study. Perhaps, creating a subreddit specific to an age group (e.g., emerging adulthood), gender, or geographic location may provide additional context to the phenomenon of HP. Further, information on the users and their parents' social, cognitive, emotional, and mental functioning is warranted to fully understand the normativeness of the research population. This may appraise the generalisability of findings obtained from online forum conversations.

Second, not all topics are identified by the LDA modeling since responses to the original Reddit posts were not included in the corpus. According to Weninger (2014), comments for each Reddit post may possess broad and varied discussions on the main topic. These threads may contain information that is sensitive or less commonly experienced (Westrupp et al., 2022). Thus, it is recommended that future research analyse Reddit posts and comments in tandem to increase the potential of topic extraction while new findings add to the existing literature on HP. Last, using a traditional approach of human coding may have provided more context to the findings given that the computer-based approach of topic modelling is developed solely based on a cluster of words. Although recent research suggests that both methods are comparable (Nanda et al., 2023), more work is required to ascertain the viability of natural language processing techniques in studying psychological research.

Conclusion

This research adopted a novel, Big Data approach to understanding Reddit users' experience with HP, contributing to the emerging efforts to amalgamate the distinct fields of psychology and computational linguistic research. Results revealed common environmental contexts of HP (i.e., school, college, work, and home) and its implication on college decisions, privacy, and social relationships. Our findings emphasised the lack of autonomy that HP fosters and encourages enhanced family communication patterns and mindfulness interventions. Furthermore, as with past research, our exploratory study supports more maternal than paternal models of HP, warranting further examination of gender in behavioural manifestations of HP. Considering the COVID-19 pandemic, future research must study the implications of high levels of parent-child contact on HP. Overall, these findings offer meaningful insights into HP through first-hand accounts.

Chapter 3

The Impact of Helicopter Parenting on Other-Profitability: Examining Egocentric Selfishness and Prosociality

Social judgment is a prominent area of research within the field of social cognition (Fiske et al., 2007; Peeters, 2005; Vonk, 1999). People globally, irrespective of culture and age, practice social judgment to interpret and evaluate the intentions of others—a crucial sociocognitive process to survive and thrive in the social world. This phenomenon is widely acknowledged as critical for effective communication, relationship establishment, and group dynamics (Kruglanski & Higgins, 2013). Thus, understanding the mechanisms of social cognition holds significant implications for shaping our responses to others. Research suggests social judgement places higher importance on behaviours that affect others than the self (Keerthigha & Singh, 2023; Vonk, 1999). When people judge an actor's behaviour, they take the perspective of those in the actor's environment (Peeters & Czapinski, 1990). Given that perception is geared towards action (i.e., impressions are formed with the intention of either approach or avoidance; Zebrowitz & Collins, 1997), perceivers are expected to adopt the viewpoint of someone responding to the actor. Therefore, behaviours that affect others are perceived as more relevant than behaviours that solely impact the self.

Social judgment involves making inferences about others' behaviours based on their attractiveness, usefulness, and whether they benefit or harm us (Fiske et al., 2007). These judgments are influenced by dimensions such as *self-profitability* and *other-profitability*, which represent the evaluative meaning of behaviors (Peeters, 1983, 1992, 2005; Peeters & Czapinski, 1990; Peeters et al., 2006). These terms underscore the notion that behaviours are assessed based on their adaptive value for oneself (self-profitability) and others (other-profitability). Self-profitable behaviours have primarily personal consequences, whereas other-profitable behaviours lead to interpersonal consequences (Abele & Wojciszke, 2007).

The behaviours are further classified as either positive (beneficial) or negative (harmful) based on their likely impact on the perceiver. For example, interaction with a helpful actor benefits others (i.e., a positive other-profitable behaviour) while interaction with a selfish actor harm others (i.e., negative other-profitable behaviour). While selfishness is considerably a self-profitable behaviour, Peeters and Czapinski (1990) argue that perceivers implicitly judge behaviours associated with ability as self-profitable, whereas behaviours in the social and moral domain are more indicative of other-profitability (Wojciszke et al., 1998). This is of social utility in certain self-profitable behaviours (Beauvois & Dubois, 2000; Peeters, 1992, 2005; Peeters et al., 2006). Given the broader implications of other-profitability than self-profitability in the social world, this paper seeks to investigate the factors influencing the development of other-profitable behaviours, with a specific focus on parenting due to the significant role parents play in an individual's socialisation process (Cheung & Lim, 2022).

Helicopter Parenting

A parenting style previously overlooked due to its perceived advantages has garnered considerable attention and investigation over the past two decades (Shin & Adame, 2023; Yılmaz, 2020). Helicopter parenting (HP) describes risk-averse parents who provide well-intentioned, but developmentally inappropriate levels of involvement in their child's life (Cullaty, 2011; LeMoyne & Buchanan, 2011; McGinley, 2018; Odenweller et al., 2014; Padilla-Walker & Nelson, 2012; Segrin et al., 2015). HP features high levels of autonomy-limiting behaviours that limit the child's ability to function independently in social settings (Keerthigha et al., 2023; LeMoyne & Buchanan, 2011; Padilla-Walker & Nelson, 2012). According to Creswell et al. (2008), HP stems from the perception that children are vulnerable and there is thus a need to shelter them from encountering the griefs and failures of life. However, by focusing intently on their child's needs, HP unintentionally promotes self-importance (McGinley, 2018), which may undermine other-profitability. Therefore, this

paper examines implications of HP on other-profitability by examining the variables of *egocentric selfishness* (negative other-profitable behaviour) and *prosociality* (positive other-profitable behaviour), both selected for their contrasting societal impact. Further discussion on these variables will ensue below.

The bulk of research on HP has primarily focused on either mothers (Reed et al., 2016; Schiffrin & Liss, 2017; Schiffrin et al., 2014) or parents in general (Bradley-Geist & Olson-Buchanan, 2014; Darlow et al., 2017; Givertz & Segrin, 2014; Hong et al., 2015; Kwon et al., 2016; LeMoyne & Buchanan, 2011; Locke et al., 2012; Nelson et al., 2015; Odenweller et al., 2014; Padilla-Walker & Nelson, 2012; Segrin et al., 2012; Segrin et al., 2013). Pleck (2012) and Schiffrin et al. (2013) discussed the synonymous use of ‘parent’ with ‘mother’, thus the possibility of research emphasising maternal models of HP. When adopting an inclusive approach, it is important to examine how maternal and paternal parenting styles differ. A limited number of studies have examined the differences in maternal HP and paternal HP. For example, mothers engaged in HP more than fathers based on both parent and child reports (Fingerman et al., 2012; Rousseau & Scharf, 2015; Scharf et al., 2017; Schiffrin et al., 2019a; van Ingen et al., 2015). In addition, some studies have found that maternal HP (Hwang et al., 2022a; McGinley & Davis, 2021; Nelson et al., 2015; Schiffrin et al., 2019a; van Ingen et al., 2015), while others have found that paternal HP (Love et al., 2020b; McGinley, 2018; Rousseau & Scharf, 2015; Schiffrin et al., 2019b) is associated with worse outcomes.

Given the gender-related distinctions in both the extent and outcomes of HP, this paper seeks to expand the existing literature by separately examining maternal and paternal models of HP. Methodological considerations are crucial in this context as many studies have conflated maternal and paternal roles or have relied on broad categorisation of parent/guardian that obscure differential impacts (e.g., Bradley-Geist & Olson-Buchanan,

2014; Darlow et al., 2017; Givertz & Segrin, 2014; Hong et al., 2015; Kwon et al., 2016; LeMoyne & Buchanan, 2011; Locke et al., 2012; Nelson et al., 2015; Odenweller et al., 2014; Padilla-Walker & Nelson, 2012; Segrin et al., 2012; Segrin et al., 2013). This often results in biased findings that may not accurately reflect the unique contributions of maternal and paternal HP. By employing more nuanced methodologies, such as gender-specific measures, this paper aims to clarify these distinctions and provide a more precise understanding of how maternal and paternal HP differently influence other-profitable outcomes. This approach not only enhances the accuracy of the findings but also informs more targeted interventions and support strategies for both mothers and fathers. Owing to the growing awareness of the differential effects of mothering and fathering (van Ingen et al., 2015), the Consolidated Helicopter Parenting Scale (CHPS) will be employed to facilitate comparisons between maternal and paternal helicopter parenting models (Schiffrin et al., 2019b). The CHPS supports a more gender-inclusive approach to parenting research, thereby enabling a clearer understanding of the distinct ways in which maternal and paternal HP influence developmental outcomes. This methodological choice potentially provides more targeted insights into the separate contributions of maternal and paternal HP.

Overview of Paper

In examining the impact of HP on other-profitability, the first part of this paper (Study 1) discusses the interaction effect of maternal and paternal HP on egocentric selfishness. Egocentric selfishness is considered a negative form of other-profitable behavior as it prioritises self-interest over the well-being of others, undermining the core principle of acting for the benefit of others within social interactions. Shifting to the positive implications of HP on other-profitability, the second part of this paper (Study 2) focuses on prosociality—an antithetical variable. Prosociality, an extensively studied variable within the realm of positive behaviour research, is subject to various influences. Hence, it would be inadequate to solely

examine prosociality without considering other pertinent variables, such as relatedness. The choice of relatedness as a mediator between maternal/paternal HP and prosocial behavior stems from its ability to capture the quality of social connections and bonds, which are influenced by the extent of parental involvement and monitoring associated with HP. Taken together, findings from this paper are anticipated to shed light on HP as a crucial, determining factor of other-profitable behaviours that affect the society and provide valuable insights into the domains of psychology and parenting education.

Egocentric Selfishness: The Negative Other-Profitable Behaviour

Selfishness plays an important role in understanding human morality and social behaviour (Carlson et al., 2022). It is often regarded as an undesirable and immoral characteristic (Kaufman & Jauk, 2020) although it possesses survival value in times of threat like resource scarcity (Carlson et al., 2022; Roux et al., 2015). Despite its importance, the psychology of selfishness has received surprisingly little attention. Past research examines selfishness from either an evolutionary biological (e.g., selfish genes), economical (e.g., rational self-interest), or philosophical (e.g., psychological egoism) standpoint (Carlson et al., 2022). However, there remains a gap in understanding the origins of selfishness within social cognitive psychology, a framework that emphasises the role of parenting styles and practices in shaping social interactions, emotional well-being, and cognitive abilities of individuals (Bandura, 1971).

Selfishness is defined as an excessive focus on oneself without consideration of others (Raine & Uh, 2019). It describes actions that either offer direct benefits to the self at the expense of others (selfish agent, e.g., refusing to contribute money to charitable causes for personal gain) or actions that offer indirect benefits to the self through the assistance of others (moral actor, e.g., charitable giving to gain status among others; Frimer et al., 2014). In hostile social settings or when basic needs are threatened, adopting a selfish approach may be

necessary for survival (Crocker et al., 2017). Despite its immediate material benefits, selfishness is unlikely to foster optimal psychological well-being, physical health, and healthy relationships. Research has shown that selfishness is motivated by several other reasons including narcissistic personality characteristics (Crocker et al., 2017), resource scarcity (Roux et al., 2015), and social class (Dubois et al., 2015).

Raine and Uh (2019) classify selfishness into three levels of intensity: adaptive selfishness, egocentric selfishness, and pathological selfishness. Adaptive selfishness is the least pathological because the individual extends care beyond themselves to include family and friends. Adaptive selfish behaviours are socially positive and functional and justified because others benefit from an individual's selfishness. For instance, in life-or-death situations, an adaptively selfish person will prioritise their own survival to prevent their family from suffering their absence (Raine & Uh, 2019). Conversely, pathological selfish individuals harm others for self-advancement by either manipulating or callously exploiting others for rewards. Pathological selfishness is associated with antisocial, narcissistic, and histrionic personality disorders, psychopathy, and Machiavellianism.

Study 1 focuses on egocentric selfishness, the proxy of self-focus (Raine & Uh, 2019). Egocentric selfish individuals are not concerned about the needs of society but are single-mindedly centered on themselves. In other words, people are not particularly advantaged or disadvantaged through the individual's prosocial or antisocial behaviours but rather disregarded in the individual's need calculus (Gerrath et al., 2023; Lowe et al., 2019). The behavioural manifestation of egocentric selfishness tends to prioritise self-serving actions over pro-social ones, to maximise their gains (Roux et al., 2015). This suggests that egocentric selfish individuals cannot take perspectives. Research has shown that individuals who prioritise their own interests tend to exhibit less warmth, empathy, altruism, and generosity towards others (Raine & Uh, 2019).

Several perspectives lay the foundation for the development of egocentric selfishness. From a sociobiological perspective, the egoistic incentive theory asserts that humans are fundamentally selfish (Caporael et al., 1989). The 'selfish gene' theory by Dawkins (2016) provides the rationale for the long-standing concept of 'economic man', which describes a hypothetical individual who behaves strictly according to their rational self-interest to maximise utility (Myers, 1983). These theories collectively argue that human behaviour evolved to optimise survival. Similarly, the Piagetian theory in developmental psychology describes egocentrism in childhood as the core of self-focus and the failure to consider others' perspectives (Piaget, 2007). Research suggests that an egocentric response is the result of overestimating the similarity between one's own and others' perspectives (Damen et al., 2020; Dunning et al., 2001; Gilovich et al., 2000; Scaffidi Abbate et al., 2016; Van Boven et al., 2000). In the context of adult personality development, the lack of perspective-taking is characterised by self-centeredness and a disregard for others (Raine & Uh, 2019).

Less is known about the contribution of the parenting environment to the development of egocentric selfishness. Parents are regarded as paramount to the process of socialisation because they are assigned the primary caregiver role and are in the position to manage their children's environments and resources (Denham et al., 2015; Grusec, 2011). They are responsible for creating interpersonal environments beyond just the family setting (Anaya & Pérez-Edgar, 2019) and continue to influence their children as they pass through important developmental milestones (Clark et al., 2015), which has theoretical implications for the development of adult personality (Lewis-Morrarty et al., 2015; Reitz et al., 2014; Stevenson-Hinde et al., 2013; Syed & Seiffge-Krenke, 2013). This affordance makes parents active agents in an individual's social and emotional contexts, specifically through parenting styles and practices. Thus, it is important to be cognizant that parenting styles are also likely to contribute to developing egocentric selfishness.

Choppers of Ego: Linking HP to Egocentric Selfishness

The social learning theory posits that a child observes and models parents' behaviours, attitudes, and emotional responses (Bandura, 1971). This implies that egocentric selfishness can stem from HP. Several research papers support this argument. First, Milon (1981) argued that high parental responsiveness cultivates a child's sense of superiority, leading to an intense self-focus. In other words, when helicopter parents excessively value a child's achievements irrespective of actual performance, it reinforces the belief that they deserve top priority. Second, Deci and Ryan (2000) suggested poor parental fostering of autonomy directs the priority of personal needs. As a result, individuals may become preoccupied with relieving their negative feelings and thus avoid helping others. Third, McGinley (2018) found that HP promotes moral actors (Frimer et al., 2014), where individuals only engage in public prosocial behaviours to seek recognition from others. Last, Nelson et al. (2019) further explain that repeated forms of parental control led to more self-focused responses, thus making it harder for individuals to consider others. Collectively, past research highlights a link between HP and egocentric selfishness.

Dual Blades Required: Understanding Co-Parenting Consistency in HP

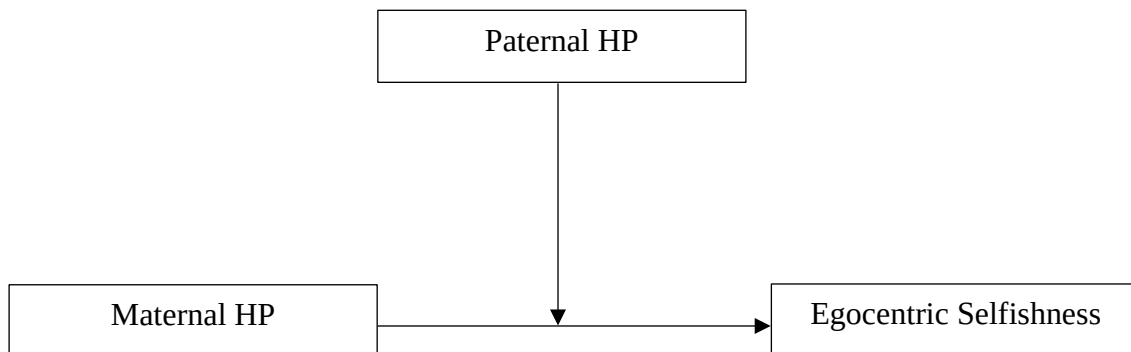
The intensity of HP outcomes may be better understood within the broader family context. Drawing on research on the family systems theory (Cox & Paley, 1997) and co-parenting literature (McHale et al., 2019), the behaviour of each parent influences one another, thus collectively shaping a family atmosphere that produces unique effects beyond the individual parent-child relationships. Co-parenting consistency refers to the degree to which parents cooperate in parenting behaviours, strategies, and responsibilities (Feinberg, 2003; Roskam & Meunier, 2009). The (dis)similarities in parenting may be attributed to factors such as the level of agreement between parents on child-rearing strategies (Feinberg, 2003), traditional gender roles of parents in each culture (Craig & Mullan, 2011), and marital

discord (Margolin et al., 2001). Co-parenting consistency is a central process for child adjustment. Prior studies have demonstrated that children benefit the most when their parents practice co-parenting consistency as compared to individual parenting behaviours (Chen et al., 2017; Feinburg et al., 2007; Kara et al., 2022; Teubert & Pinquart, 2010). This underscores the significance of parents demonstrating mutual support and coordinated behaviours for optimal child outcomes.

According to Kara et al. (2022), co-parenting consistency is classified into three categories based on its potential impact on child outcomes. First, *positive co-parenting* describes parents who demonstrate the most adaptive level of coordination in adopting ideal parenting behaviours (e.g., both parents display high levels of emotional warmth or low levels of rejection). Positive co-parenting improves child functioning and promotes favourable child outcomes (Chen et al., 2017; Feinburg et al., 2007; Kara et al., 2022; Teubert & Pinquart, 2010). Second, *negative co-parenting* describes parents who simultaneously adopt dysfunctional or maladaptive parenting styles and practices (e.g., both parents display low emotional warmth and high rejection behaviours; Kara et al., 2022). *Negative co-parenting* is associated with negative consequences including psychological (Dwairy, 2008; 2010), internalising, and externalising problems (Berkien et al., 2012). Last, *inconsistent co-parenting* describes parents who adopt discrepant levels of the same parenting behaviours (Kara et al., 2022). Inconsistent parenting behaviours might lead to identical outcomes with negative co-parenting. That is, the presence of one parent's negative behaviour could be enough to produce negative outcomes (Baril et al., 2007; Dwairy, 2008; Feinberg et al., 2007). On the contrary, Sim and Chin (2014) suggest that when one parent is authoritarian and the other is authoritative, the authoritative parent can serve as a protective factor, challenging the view that inconsistent parenting is inherently maladaptive.

Considering the literature predominantly presents HP as a negative parenting style, it is expected that families in which both parents engage in HP pose the highest chance of negative child outcomes. However, Rote et al. (2020) suggest that families in which both parents engage in similar levels of HP experience more co-parenting consistency, which allows children to perceive HP as appropriate thus resulting in improved family relationships and outcomes. These opposing viewpoints further emphasise the need to understand the interaction between maternal HP and paternal HP on the development of egocentric selfishness among children. While research largely continues to focus on maternal HP (Wang et al., 2023), with the rising involvement of fathers (Cabrera et al., 2000), the present research considers the vital role that co-parenting consistency in HP plays in the development of maladaptive outcomes like egocentric selfishness.

Taken together, Study 1 examines the moderating effect of paternal HP on the relationship between maternal HP and egocentric selfishness. Figure 3.1 presents the conceptual model of the proposed moderation pathway. Due to the exploratory nature of this study, a research question rather than priori hypothesis is proposed: *Does maternal HP and paternal HP interact to predict egocentric selfishness?*

Figure 3.1*Conceptual Model of the Moderation Analysis in Study 1***Prosociality: The Positive Other-Profitable Behaviour**

Social psychology has a longstanding interest in understanding motives for prosocial behaviour and the extent to which they are driven by selfish versus altruistic reasons (Pavey et al., 2011). Prosocial behaviour is defined as a voluntary act primarily intended to benefit others (McGinley, 2018). Research has highlighted that relatedness promotes feelings of connectedness to others, which in turn predicts more prosocial behaviour (Hodge & Gucciardi, 2015; Pavey et al. 2011; Shiraki & Igarashi, 2018; Tian et al., 2018; Yang et al., 2019). In recent years, research on prosocial behaviour has shifted its focus to identify parenting styles and practices that predict intention and engagement in prosocial activities (Wong et al., 2021). HP has been given limited regard in this domain (McGinley, 2018; Moilanen & Manuel, 2019; Nelson et al., 2019; Schiffrin et al., 2021). With research suggesting HP adversely affects relatedness through decreased interpersonal communication (Givertz & Segrin 2014; Odenweller et al., 2014; Segrin et al., 2012) and impaired social relationships (Darlow et al., 2017; Kouros et al., 2017; van Ingen et al., 2015), the present research aims to examine the mediating effect of relatedness on the relationship between maternal/paternal HP and prosocial behaviour. The findings are anticipated to shed light on

the role of relatedness as a potential mitigating factor in alleviating the detrimental effect of HP on prosocial behaviour.

Nurturing Relatedness in Youths

According to Blatt (Blatt, 2004; Blatt & Luyten, 2009), *relatedness* involves the development of mature, reciprocal, and interpersonal relationships. However, delays or deficits in the development of relatedness results in maladaptive outcomes including problems with social adjustment in higher education (van Ingen et al., 2015). Deci and Ryan (2000) emphasise that *relatedness satisfaction* occurs when children experience appreciation and close connections with significant individuals. However, experiencing *relatedness frustration* invokes feelings of relational exclusion, loneliness, and increased anxiety (Nishimura & Suzuki, 2016). It is important to note that frustration does not signify a lack of satisfaction; instead, frustration arises when a need is actively undermined rather than merely unsatisfied, thus creating vulnerability to ill-being (Soenens et al., 2017). Consistently, Costa et al. (2019) demonstrate that relatedness satisfaction allows individuals to feel connected to others, while frustration leads to social alienation and loneliness. To sum, past findings highlight the importance of relatedness in youth well-being (Inguglia et al., 2015).

As children transition into youthhood, the parent-child relationship is typically affected by the conflict arising from the child's efforts to establish relatedness with others (Liga et al., 2017). Youths raised by helicopter parents experience a diminished sense of relatedness with their parents (Segrin et al., 2012; 2015). Contrary to the intuition that increased involvement fosters better connection (Padilla-Walker & Nelson, 2012), HP decreases satisfaction with family (Segrin et al., 2012) leading youths to become more psychologically distant from their parents. Hence, HP's excessive control and protection may unintentionally limit a child's opportunity to learn important social and interpersonal skills that are essential for developing relatedness (Odenweller et al., 2014). Numerous studies have

highlighted the negative effects of HP on social relationships (Darlow et al., 2017; Givertz & Segrin, 2014; Kouros et al., 2017; Odenweller et al., 2014; Padilla-Walker & Nelson, 2012; Segrin et al., 2012; van Ingen et al., 2015), suggesting a potentially detrimental impact of HP on the development of relatedness.

Self-determination theory (SDT) underscores relatedness as one of three basic psychological needs for well-being (Deci & Ryan, 2000). However, research continues to champion the basic psychological needs of autonomy and competence over relatedness (Hurly & Walker, Schiffrin et al., 2021; Shin & Adame, 2023). This may be attributed to individuals' tendency to engage in self-directed activities that take precedence over social connections, thus making relatedness less prominent in the basic psychological needs for well-being (Deci & Ryan, 2008; Ryan & Deci, 2000; Soenens & Vansteenkiste, 2010). As relatedness is considered a fundamental need for optimal interpersonal functioning and social development (Deci & Ryan, 2000), it remains imperative to understand the dynamics between HP and relatedness in shaping other-profitable behaviours, such as prosociality.

Significance of Prosociality

Prosocial behaviours are a distinguishing feature of youths who are flourishing rather than floundering (Nelson & Padilla-Walker, 2013). Prosocial behaviours are voluntary acts intended to benefit others (McGinley, 2018). Examples of prosocial behaviours include comforting a distressed person, assisting strangers with small tasks, and donating money to charity (Baumsteiger & Siegel, 2019). Participating in prosocial behaviours are indicative of social cognitive development (Fabes et al., 1999). In addition, engaging in such others-profitable behaviours have been considered necessary for the successful transition to adulthood (Arnett, 2003; Mayseless & Scharf, 2003; Nelson & Barry, 2005). Prosocial behaviours are imperative in forming and maintaining interpersonal relationships and group functioning (Baumsteiger & Siegel, 2019; Carroll et al., 2007), both of which mark the

hallmarks of youthhood (Arnett et al., 2014). Being prosocial reduces one's likelihood of engaging in antisocial behaviours (Carlo et al., 2014), increases emotional regulation (Carlo et al., 2012), and enhances success in academic and social relationships (Carlo et al., 2017).

The development of prosocial behaviours is significantly influenced by socialisation (Hastings et al., 2015). The socialisation of prosocial behaviours is omnipresent and progresses through interactions between an individual and their parents, siblings, peers, teachers, and culture. Despite the variety of socialisation agents, parents are regarded as paramount to the process of socialisation (Denham et al., 2015; Grusec, 2011). Grusec (2011) noted that parents are "powerful socialisers (p.245)" because they are assigned the primary caregiver role and are in the position to manage their children's environments and resources. A parent-child relationship continues to occupy a central place in the socialisation process as the child enters youthhood (Clark et al., 2015). Therefore, prosocial behaviours play an important role in youthhood and much research should be dedicated to understanding the continuing contribution of parents to youth's prosociality.

Studies have reported multiple parenting variables predictive of prosocial behaviours, including parental attachment (Carlo et al., 2012; Laible, 2007; Laible et al., 2004; Mattanah et al., 2011; McGinley & Evans, 2020) and parenting practices (Barry et al., 2008). However, there has been a recent shift in focus to parenting styles that predict prosocial behaviours in emerging adults (Clark et al., 2015). A plethora of studies have examined the relationship between parenting styles and prosocial behaviours in children and adolescents (Carlo et al., 2007; Carlo et al., 2011; Carlo et al., 2017; Davis et al., 2015; Fabes et al., 1999; Hastings et al., 2007; Malonda et al., 2019; Padilla-Walker et al., 2012). However, little is known about whether these variables have utility in studying youthhood.

While a bulk of research on HP has focused on its negative outcomes, its impact on positive, prosocial outcomes has been scarcely documented (Padilla-Walker, 2014).

Generally, studies have found no direct association between HP and prosocial behaviours (McGinley, 2018; Moilanen & Manuel, 2019; Schiffrin et al., 2021). Instead, their relation is indirectly affected by gender-dyads, parental attachment (McGinley, 2018), self-regulation (Moilanen & Manuel, 2019), and basic psychological needs satisfaction (Schiffrin et al., 2021). On the contrary, a series of studies conducted by Nelson et al. (2019) have identified a negative correlation between HP and prosocial behaviours, however, only in one data set due to a large amount of missing data in another. These limited and contradictory findings ascertain the need to critically examine the relationship between HP and prosociality.

Schiffrin et al. (2021) is the only published literature that examines the mediating role of basic psychological needs on the relationship between HP and prosocial tendencies among youths. Consistent with Schiffrin et al. (2014; 2019a), results revealed that high levels of HP were associated with low levels of basic psychological needs satisfaction (Schiffrin et al., 2021). However, findings suggest that competence and relatedness may not be as important as autonomy in mediating the effects of HP and prosocial outcomes. This is contrary to past research that highlights the role of competence (Gagné, 2003; Haivas et al., 2013; Hodge & Gucciardi, 2015; Tian et al., 2018) and relatedness (Hodge & Gucciardi, 2015; Pavey et al., 2011; Shiraki & Igarashi, 2018; Tian et al., 2018; Yang et al., 2019) as a critical determinant of prosocial behaviour. Essentially, the current body of literature has made it abundantly clear why it is necessary to continue examining the impact of HP on prosocial behaviours among youths. Hence, continued investigations are necessary to understand the mechanisms through which HP impacts prosociality.

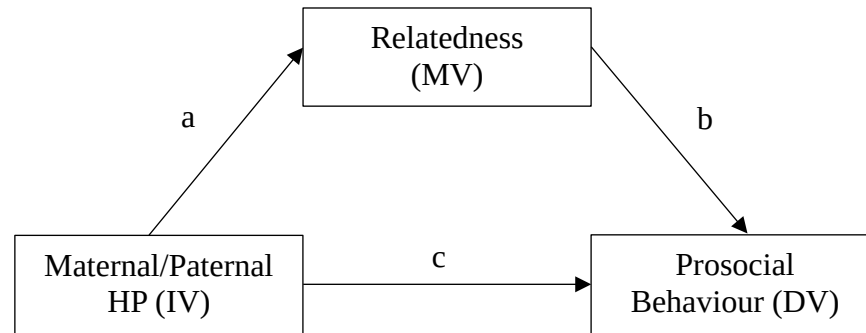
Taken together, Study 2 aims to examine the mediating effect of relatedness on the relationship between maternal/paternal HP and prosocial behaviour. Figure 3.2 presents the conceptual model of the proposed mediation pathways.

H₁: Relatedness mediates the effect of maternal HP on prosocial behaviour.

H₂: Relatedness mediates the effect of paternal HP on prosocial behaviour.

Figure 3.2

Conceptual Model of the Mediation Analyses in Study 2



According to MacKinnon (2012), two parts of the conceptual model should be considered to test mediation effects. The product of paths *a* and *b* (*ab*) represents the mediated effect. While ideally the relationship between IV and DV (path *c*) is significant, it is not mandatory to proceed in examining hypothesised mediation (e.g., Ranby et al., 2011). The statistical significance of the *ab* estimate is therefore used to evaluate the statistical evidence of mediation in this study.

General Methodology

Participants and Design

A total of 567 participants accessed the online cross-sectional survey. Of the total access, 36 participants (6.35%) did not complete the survey. The exclusion criteria for data retention were as follows: (a) participants who did not complete the survey, (b) younger than 18 and older than 29 years of age, or (c) not Singapore citizens or permanent residents. The final sample comprised $N = 531$ Singaporeans with an age range of 18-25 years ($M = 21.08$, $SD = 2.39$). There was no missing data. The demographic characteristics of the sample are reported in Table 3.1.

Table 3.1*Demographic Characteristics of the Participants*

Variables	% (N)
Total Participants	100 (531)
Sex	
Male	24.3 (129)
Female	73.3 (389)
Unspecified	2.4 (13)
Ethnicity	
Chinese	65.2 (346)
Malay	4.1 (22)
Indian	21.5 (114)
Other	9.2 (49)

Measures***Maternal HP and Paternal HP***

The 10-item consolidated helicopter parenting scale (CHPS; Schiffrin et al., 2019b) was used to assess participants' perceived levels of maternal HP and paternal HP, on two separate forms (e.g., "I think my mother/father is too overly involved in my life"; Appendix C). Items from the original measures were re-worded in the CHPS to ask about mothers and fathers separately. Responses were indicated on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Mean scores can range from 1 to 5, with higher scores indicating a higher level of perceived HP. The Cronbach α for the CHPS is .92 (Schiffrin et al., 2019b), indicating excellent internal consistency.

Egocentric Selfishness

The 8-item egocentric selfishness scale (Raine & Uh, 2017; Appendix D) was adapted in part to assess selfish behaviours and attitudes in the form of single-minded focus on the self (e.g., "When it comes to helping myself or helping others, I tend to help myself"). Responses were indicated on a 3-point Likert scale ranging from 0 (*disagree*) to 2 (*agree*). Mean scores can range from 0 to 2, with higher scores indicating a higher level of egocentric

selfishness. The Cronbach α for the scale is .76 (Raine & Uh, 2017), indicating acceptable internal consistency.

Prosocial Behaviour

The 4-item Prosocial Behavioural Intentions Scale (PBIS; Baumsteiger & Siegel, 2019) was used to assess how likely participants would behave prosocially (e.g., “Help a stranger find something they lost, like their key or a pet”; Appendix E). Responses were indicated on a 7-point Likert scale ranging from 1 (*definitely would not do this*) to 7 (*definitely would do this*). Scores can range from 1 to 7, with higher scores indicating stronger intentions to perform prosocial behaviours. The Cronbach α for the scale is .81 (Baumsteiger & Siegel, 2019), indicating good internal consistency.

Relatedness

An 8-item subscale from the Depressive Experiences Questionnaire (DEQ; Blatt et al., 1976) was adapted in part to assess participants’ relatedness. The relatedness subscale consisted of 8 items (e.g., “I would feel like I’d be losing an important part of myself if I lost a very close friend”; Appendix F). Responses were indicated on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Scores were calculated using the scoring system developed by Blatt et al. (1995) and mean scores can range from 1 to 7, with higher scores indicating higher relatedness. The Cronbach α for the scale is .72 (Blatt et al., 1976), indicating acceptable internal consistency.

Demographic Variables

The demographic variables, such as age, sex, and ethnicity were measured.

Procedure

Ethical clearance for the study was granted by the Human Research Ethics Committee at James Cook University, Australia (Ref. H8157; Appendix G). Research posters carrying the link to the online survey were circulated via the University's research sites (Sona Systems

®) and social media platforms (e.g., Facebook, Instagram, Twitter, and LinkedIn). Interested participants responded to the link, which directed them to the Qualtrics survey site. After reading the preliminary information about the survey, they had an option to proceed or exit the study. Upon completion of the survey, undergraduates were rewarded with coursework credits while the public was rewarded with SGD 6. The survey took about 15 minutes to complete. Data were analysed using SPSS Version 27 with the alpha level set at 0.05.

Results: Study 1

Preliminary Analysis

The intercorrelations, descriptive statistics, and reliability coefficients of maternal HP, paternal HP, and egocentric selfishness are shown in Table 3.2. The resulting scales showed high levels of internal consistency.

Table 3.2

Intercorrelations, Descriptive Statistics, and Reliability Coefficients of Maternal HP, Paternal HP, and Egocentric Selfishness (N = 531)

Variable	1	2	<i>M</i>	<i>SD</i>	<i>Reliability Coefficients</i>
1. Maternal HP	-	-	2.99	.85	.88
2. Paternal HP	.34**	-	2.57	.84	.88
3. Egocentric Selfishness	.11*	.1*	1.73	.45	.75

* $p < .05$; ** $p < .01$; HP: Helicopter Parenting

Test of Research Question

Model 1 of PROCESS v3.5.3 macro for SPSS was used to examine the moderation effect of paternal HP on the relationship between maternal HP and egocentric selfishness with 5000 resamples to bootstrap 95% confidence intervals (Hayes, 2018). The overall model explained a statistically significant 6.01% of the variation in egocentric selfishness, $F(6, 524) = 5.58, p < .001$. Maternal HP was a significant predictor of egocentric selfishness whilst controlling for age, sex, and ethnicity in the model, $b = 0.049, t(524) = 2.06, p = .04$, bias

corrected 95% CI [0.002, 0.097]. However, paternal HP was not found to be significant predictor of egocentric selfishness whilst controlling for age, sex, and ethnicity in the model, $b = 0.033$, $t(524) = 1.32$, $p = .19$, bias corrected 95% CI [-0.016, -0.081]. The interaction term accounted for significant additional variance in egocentric selfishness, $R^2_{ch} = .01$, $F_{ch}(1, 524) = 4.35$, $p = .04$. Inspection of the coefficient showed that the two-way interaction between maternal HP and paternal HP was significant, $b = -.053$, $t(524) = -2.09$, $p = .04$, bias corrected 95% CI [-0.102, -0.003].

Simple slope analyses were conducted to interpret the interaction between maternal HP and paternal HP whilst controlling for age, sex, and ethnicity in the model. Paternal HP was categorised into low (-1SD), medium (mean), and high (+1SD) levels based on the conditioning value of SD. Results showed that at low ($B = .09$, $SE = .03$, $p = .002$) and medium ($B = .05$, $SE = .02$, $p = .04$) levels of paternal HP, maternal HP was positively associated with egocentric selfishness. However, at high level of paternal HP, maternal HP did not significantly predict egocentric selfishness ($p = .87$). The analysis provided partial affirmation for the research question. Figure 3.3 and Table 3.3 display the regression parameter estimates and visual representation of the moderation model, respectively.

Table 3.3

Summary of Regression Analysis Examining the Moderating Effect of Paternal HP on the Relationship between Maternal HP and Egocentric Selfishness

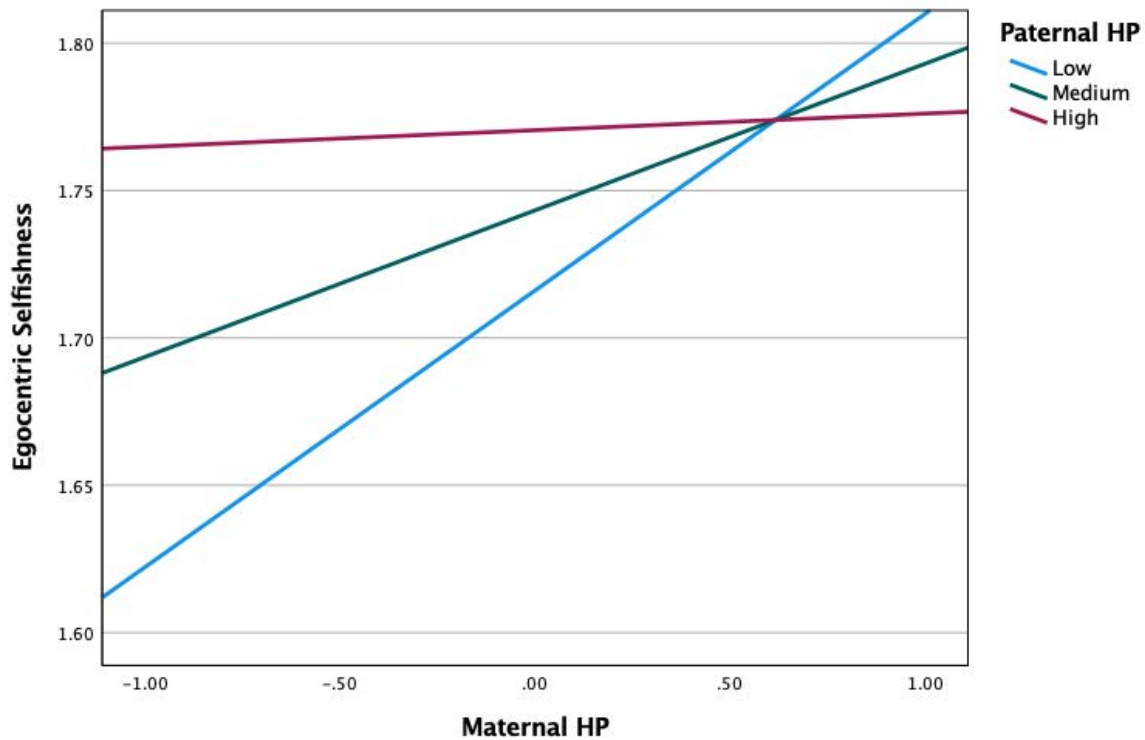
		Coeff.	SE	<i>t</i>	<i>p</i>
Constant	i_Y	2.467	.205	12.015	< .001
Maternal HP (<i>X</i>)	b_1	0.049	.024	2.056	.04
Paternal HP (<i>W</i>)	b_2	0.033	.025	1.324	.19
Maternal HP x Paternal HP (<i>XW</i>)	b_3	-0.053	.025	-2.086	.04
Age (<i>C</i> ₁)	b_4	-0.021	.008	-2.481	.01
Sex (<i>C</i> ₂)	b_5	-0.109	.042	-2.597	.01
Ethnicity (<i>C</i> ₃)	b_6	-0.054	.018	-2.969	.003

$$R^2 = .06, MSE = 0.2$$

$$F(6, 524) = 5.58, p < .001$$

Figure 3.3

Moderating Effect of Paternal HP on the Relationship Between Maternal HP and Egocentric Selfishness



Discussion: Study 1

Study 1 examined the moderating effect of paternal HP on the relationship between maternal HP and egocentric selfishness. The results provided a partial affirmative test for the research question. Paternal HP moderated the relationship between maternal HP and egocentric selfishness. Specifically, an increase in paternal HP weakens the positive relationship between maternal HP and egocentric selfishness. This shows that the strength of association between maternal HP and the level of egocentric selfishness depends on the level of paternal HP.

The results revealed that low and medium levels of paternal HP increased the effect of maternal HP on egocentric selfishness. This is in line with past research that demonstrates

negative co-parenting (i.e., the use of dysfunctional or maladaptive parenting styles and practices by both parents) is associated with negative consequences (Berkien et al., 2012; Dwairy, 2008; 2010; Kara et al., 2022). It is noteworthy that the strength of the relationship between maternal HP and egocentric selfishness decreases as paternal HP increases. This may be explained by Rote et al. (2020) who suggest children perceive HP as appropriate when both parents engage in similar levels of HP. Further, the greater the exposure children have to a specific parenting behaviour, the more inclined they are to view that behaviour conventional and positive (Barnett et al., 1996; Gershoff et al., 2010). This emphasises that parenting style plays an indispensable role in cultivating adaptive outcomes and HP remains detrimental to the development of prosocial behaviours (McGinely, 2018). Taken together, the finding reflects that there may be a complex and subtle relationship between HP and co-parenting consistency, which functions in tandem to collectively produce child outcomes. This study is among the first to examine the interactive effect between maternal HP and paternal HP, thus warrants further research on the implications of co-parenting consistency in HP.

The results also revealed that a high level of paternal HP, maternal HP did not significantly predict egocentric selfishness. One possible explanation for this unexpected, yet intriguing finding is the recent cultural shift of perceiving fathers who are overly involved as good parents (Schiffrin & Liss, 2017). Paternal HP is expected to appear salient as it is often seen as deviating from the expectation of the father figure (Love et al., 2020b), one who spends less time with children (Jung et al., 2019) and reserves involvement for more serious affairs (e.g., college admissions; Somers & Settle, 2010). As with research suggesting fathers are subject to less stringent expectations in parenting compared to mothers (Arendell, 2000; Hays, 1998; Tummala-Narra, 2009; Wall & Arnold, 2007), high levels of paternal HP in the present study may have been perceived as positive parenting rather than negative. This argues

for the theoretical perspective that individuals may view high involvement as an indication of warmth, particularly when they do not perceive it as overcontrolling (Pomerantz et al., 2007). This aligns with Cheung and Lim's (2022) research on parenting styles in Singapore, emphasising a positive perception of strict parenting and control. This may be indicative that HP is more acceptable in the Asian region as with past research (Hwang et al., 2022b; Kwon et al., 2017; Lee & Kang, 2018; Zong & Hawk, 2022). Alternatively, HP in the context of an otherwise warm parent-child relationship mitigates feelings of being overcontrolled (Nelson et al., 2015). As with prior research (Hendrick, 1981; Thomas et al., 1997), this study underscores that individual perceptions of their relationship with parents are generally more influential than objective measures of parenting. While there is stronger empirical support for the adverse effects of HP, the mixed findings in the present study advocate for additional research to further address the potential role of parent-child relationship in HP research.

Results: Study 2

Preliminary Analysis

The intercorrelations, descriptive statistics, and reliability coefficients of maternal HP, paternal HP, relatedness, and prosocial behaviour are shown in Table 3.4. The resulting scales showed acceptable levels of internal consistency.

Table 3.4

Intercorrelations, Descriptive Statistics, and Reliability Coefficients of Maternal HP, Paternal HP, Relatedness, and Prosocial Behaviour (N = 531)

Variable	1	2	3	<i>M</i>	<i>SD</i>	<i>Reliability Coefficients</i>
1. Maternal HP	-	-	-	2.99	.85	.88
2. Paternal HP	.34**	-	-	2.57	.84	.88
3. Relatedness	.21**	.19**	-	4.58	.83	.61
4. Prosocial Behaviour	-.07	-.001	.14**	5.71	.83	.66

** $p < .01$; HP: Helicopter Parenting

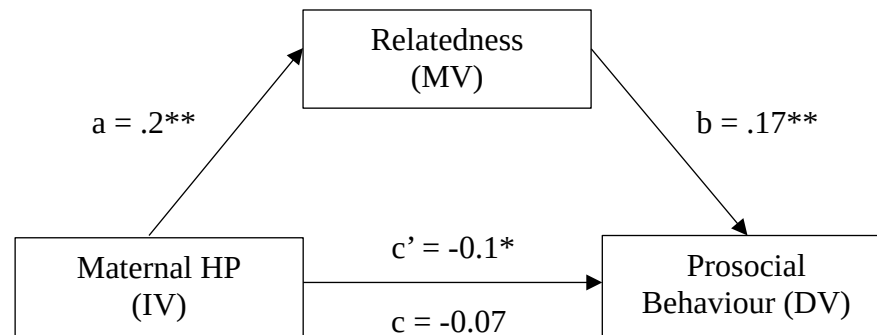
Hypotheses Testing

Mediation analysis was performed using SPSS Process Model 4 (Hayes, 2018). Model 4 estimated the indirect effect (IE) of maternal/paternal HP on prosocial behaviour via relatedness and the bias-corrected 95% confidence interval (CI) around that IE from 5,000 bootstrap resamples. Following MacKinnon (2012), mediation can be inferred if the indirect effect (IE), calculated as the product of paths a and b , is statistically significant and its bias-corrected 95% confidence interval excludes zero. The IE of maternal HP on prosocial behaviour via relatedness was significant, $IE = .03$, bias-corrected 95% CI [.013, .059]. Specifically, maternal HP significantly predicted relatedness (path a), $b = .2$, $t(529) = 4.863$, $p < .001$, bias corrected 95% CI [0.119, 0.282]. Relatedness significantly predicted prosocial behaviour (path b), $b = .17$, $t(528) = 3.76$, $p < .001$.

The direct effect (c') of maternal HP on prosocial behaviour was also significant, $b = -0.101$, $t = -2.361$, $p = .02$. While a mediation in the absence of a total effect (c) may seem contradictory ($b = -0.068$, $t = -1.598$, $p = .11$), evidence has suggested that the lack of a total effect does not preclude the possibility of observing an IE (Kenny & Judd, 2014; MacKinnon, 2012; Rucker et al., 2011). Thus, it can be argued that relatedness mediated the relationship between maternal HP and prosocial behaviour, indicating that Hypothesis 1 was supported. Results are presented in Figure 3.4.

Figure 3.4

Statistical Diagram of the Mediation Effect of Relatedness on the Relationship between Maternal HP and Prosocial Behaviour

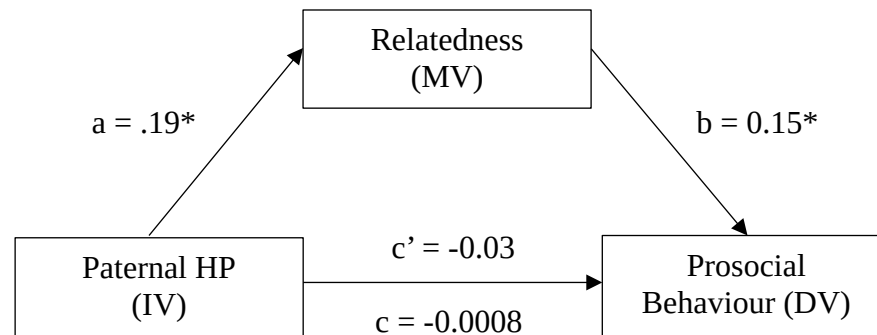


Note. * $p < .05$; ** $p < .001$; HP: Helicopter Parenting

The IE of paternal HP on prosocial behaviour via relatedness was significant, IE = .03, bias-corrected 95% CI [.010, .052]. Specifically, paternal HP significantly predicted relatedness (path a), $b = .19$, $t(529) = 4.529$, $p < .001$, bias corrected 95% CI [0.108, 0.274]. Relatedness significantly predicted prosocial behaviour (path b), $b = .15$, $t(528) = 3.39$, $p < .001$. The absence of a direct ($b = -0.029$, $t = -0.674$, $p = .5$) and total effect ($b = -0.001$, $t = -0.018$, $p = .99$) do not preclude the possibility of observing an IE (Kenny & Judd, 2014; McKinnon, 2012; Rucker et al., 2011). Thus, it can be argued that relatedness mediated the relationship between paternal HP and prosocial behaviour, indicating that Hypothesis 2 was supported. Results are presented in Figure 3.5.

Figure 3.5

Statistical Diagram of the Mediation Effect of Relatedness on the Relationship between Paternal HP and Prosocial Behaviour



Note. * $p < .001$; HP: Helicopter Parenting

Discussion: Study 2

Study 2 examined the mediating effect of relatedness on the relationship between maternal/paternal HP and prosocial behaviour. The results supported the hypotheses, suggesting that relatedness mediated the relationship between maternal/paternal HP and prosocial behaviour. While the results are indicative of a mediating mechanism linking maternal/paternal HP to prosocial behaviour, it is crucial to acknowledge the lack of evidence demonstrating maternal/paternal HP impacts prosocial behaviour. Nevertheless, should an impact exist, the findings propose it is likely due to the mediating effect of relatedness. This standpoint (Agler et al., 2017), although cautious, provides a preliminary understanding of the potential relationship between HP, prosocial behaviour, and relatedness.

Similar to prior research, HP was not correlated with prosociality (McGinley, 2018; Moilanen & Manuel, 2019; Nelson et al., 2019; Schiffrin et al., 2021). Rather, the relation between HP and prosociality was only evident indirectly through the impact of HP on the basic psychological needs of relatedness. The results revealed that both maternal and paternal HP were associated with decreased prosociality through its positive impact on relatedness. While the current findings align with past findings that underscore relatedness as a critical

determinant of prosocial behaviour (Hodge & Gucciardi, 2015; Pavey et al., 2011; Shiraki & Igarashi, 2018; Tian et al., 2018; Yang et al., 2019), they deviate from prior research that proposes a negative impact of HP on the development of relatedness (Darlow et al., 2017; Givertz & Segrin 2014; Kouros et al., 2017; Odenweller et al., 2014; Padilla-Walker & Nelson, 2012; Segrin et al., 2012; 2015; van Ingen et al., 2015). In other words, findings in this paper argue that HP enhances relatedness among youths. This may be explained by the frequent communication between helicopter parents and their children that fosters strong interpersonal communication skills, which translates into effective and meaningful social interactions with others (Arroyo et al., 2012; Barbato et al., 2003). In addition, the active involvement of helicopter parents may have served as a model for positive social engagement, resulting in children developing increased awareness of the importance of actively participating in social activities (Roy & Giraldo-García, 2018). These dynamics may have collectively contributed to a heightened sense of relatedness.

Notably, despite a positive association between relatedness and prosocial behaviour, both maternal and paternal HP were associated with decreased prosociality. This suggests that the positive impact of HP on relatedness does not sufficiently compensate for the overall negative impact of HP on prosocial behavior when both direct and indirect effects are considered. In other words, while HP may positively contribute to the development of relatedness, this positive effect might be overshadowed by other negative aspects of HP that directly impact prosocial behavior. This warrants further investigation into factors beyond the basic psychological need of relatedness that plays a role in HP's impact on prosocial behavior. For instance, competitive climates may suppress prosocial behaviour even within existing relational connections (David et al., 2021). Addressing this, it is crucial to question the competitive climate within the demographic under examination and its potential influence

in future studies. Overall, the findings reveal HP as a potentially detrimental approach to cultivating prosocial behaviours, with its adverse effects outweighing potential benefits.

Overall Discussion

This paper sought to investigate the impact of HP on other-profitability. Specifically, two studies were employed to examine the interaction effect of maternal and paternal HP on egocentric selfishness (Study 1) and the mediating effect of relatedness on the relationship between maternal/paternal HP and prosociality (Study 2). The findings shed light on HP as a defining factor shaping behaviours impacting society. The following sections will first discuss the two studies and their broader implications on the HP literature. Next, highlight the paper's overall contributions, limitations, and directions for future research.

Key Findings

Study 1 revealed an increase in paternal HP weakens the positive relationship between maternal HP and egocentric selfishness, underscoring the collaborative influence of HP behaviours between both parents in shaping (mal)adaptive outcomes and the rising normativity of paternal display of overinvolvement. Findings hold the potential for promoting healthier socioemotional development among youths and illuminate the implications of co-parenting consistency, perceived parent-child relationship, and family structures in research related to HP. In a similar vein, Study 2 demonstrated HP's positive impact on relatedness does not offset its overall negative impact on prosocial behaviour, emphasising the detrimental effects of HP outweigh its potential benefits. This observation underscores the complexity of the HP phenomenon and potentially explains why this area of research tends to predominantly focus on maladaptive outcomes. Importantly, findings suggest HP compromises on adequate opportunities for youths to develop other-profitable behaviours and these missed opportunities can be particularly harmful concerning interpersonal relationships. This aligns with recent research that proposes HP challenges the building of meaningful

relationships (Keerthigha et al., 2023). Taken together, it is important to note that while some level of parental involvement is essential, finding a balance between guidance and allowing children to learn from their experiences is crucial for a healthy socio-emotional development. Reflection and tolerance towards HP practices (e.g., heightened paternal involvement and increased relatedness) may potentially serve as a standard for designing interventions that support adaptive socio-cognitive and emotional development in youth.

Implications and Contributions

This paper holds implications both for individuals and the broader societal context. First, the findings shed light on the potential negative consequences of negative co-parenting, specifically in terms of fostering egocentric selfishness. Recognising the importance of practicing positive parenting styles and co-parenting consistency prompts healthy child adjustments (Chen et al., 2017) and the cultivation of prosocial behaviours (Feinberg et al. 2007). Next, the findings serve as a catalyst for raising parental awareness of the potential consequences associated with HP. Educational programs and resources may be developed to help parents strike a balance between providing support and fostering independence, thereby mitigating the risk of nurturing egocentric behaviours in their children. Insights from Gloster et al. (2020) can guide the creation of intervention strategies aimed at fostering prosocial behaviours. The intervention involves individuals promoting psychological flexibility through active engagement with values and reflection on obstacles hindering the implementation of the behaviours aligned with these values. Other interventions such as mindfulness (Wallmark et al., 2013) and compassion (Weng et al., 2013) training may be simultaneously considered.

Limitations and Directions for Future Research

While this paper makes novel, scholarly contributions to the existing body of literature on HP, it is imperative to consider its limitations. First, the cross-sectional nature of

the data constrains the ability to confidently establish a causal inference between HP and other-profitable behaviours such as egocentric selfishness and prosocial behaviour.

Prospective longitudinal studies may reveal the potential dynamic shifts in HP and elucidate its long-term impact on the development of other-profitable behaviours. Second, the cultural context (i.e., Singapore) within which the studies were conducted require scrutiny. The complexity of Asian family structures (Kurrien & Vo, 2004) warrants future research on HP to examine the entire co-parenting network, including grandparents and siblings, and their contribution to the development of maladaptive outcomes in individuals. Moreover, the competitive climate in the culture adds another layer to the dynamics of parenting (Leung & Shek, 2018). Understanding the interplay between culture and HP is thus pivotal for grasping its comprehensive impact on youths and their social, cognitive, and emotional development. Last, the emergence of the COVID-19 pandemic in Singapore at the time of data collection prompts that the findings from this study should be cautiously generalised (Keerthigha et al., 2023). The stay-home orders considering COVID-19 have negatively impacted parent-child relationships (Chung et al., 2019), which may be indicative that HP burgeoned in times of the pandemic. Coherently, research has also shown more salient effects of HP among individuals living with their parents as compared to those living away from their parents (Hong & Cui, 2020). Therefore, a replication study is required to examine whether these findings can be generalised to a post-pandemic world.

Conclusion

This paper investigated the impact of HP on other-profitability through the implementation of two research studies. Results revealed an increase in paternal HP weakens the positive relationship between maternal HP and egocentric selfishness. Additionally, maternal/paternal HP was found to decrease relatedness-mediated prosociality despite positive HP-relatedness and relatedness-prosociality relationships. The findings proposed

increased paternal involvement and heightened relatedness as potential interventions to counteract the ill-effects of HP practices. Confronting the implications of HP practices is imperative to promote a positive socio-cognitive and emotional development among youths. Given interpersonal consequences are judged more critically than personal consequences, ongoing HP research efforts are essential for cultivating socially adept individuals who can navigate and contribute positively within the broader societal context.

Chapter 4

Proximity Predicaments: An In-Depth Analysis of Helicopter Parenting, Basic Psychological Needs, and the Effectiveness of Outward Bound Singapore in Cultivating Resilience

The ability to exercise resiliency in the face of adversity is a desired outcome of Singapore's education system (Ministry of Education, 2023). Students face a wide range of stressors (e.g., academic difficulties, relational adjustment, and employment pressure) that may contribute to mental health problems (Galatzer-Levy et al., 2016). Resilience, defined as the ability to adapt, overcome, and recover from such stressors (Neufeld & Malin, 2019; Ong et al., 2006; Seery et al., 2010; Ungar, 2013), is not only integral for student success but also serves as a buffer against negative psychological outcomes (Fullerton et al., 2021; van Wyk et al., 2022). Past research has positioned resilience as a process, capacity, and outcome crucial for effectively responding to challenges or threats, highlighting its overall significance in adaptive developmental pathways (Yates et al., 2003). Given the serious implications of resilience on students, promoting their resilience warrants greater attention.

Current evidence indicates that helicopter parenting (HP), characterised by developmentally inappropriate levels of parental involvement, is associated with low resilience among students (Hall et al., 2021; Low & Chong, 2023; Reilly & Semkovska, 2018; Seki et al., 2023). Considering the growing use of the self-determination theory (SDT) to elucidate the adverse effects of HP (Darlow et al., 2017; Schiffrin et al., 2019a; Schiffrin et al., 2021), the first part of this paper (Study 1) aims to examine the impact of HP on resilience through the mediation effects of the basic psychological needs (i.e., autonomy, competence, and relatedness). To offer further insight, the second part of this paper (Study 2) tests the effectiveness of the Outward Bound Singapore (OBS) program in bolstering resilience. Collectively, the findings from this paper aim to provide empirical evidence on the

adverse effects of HP on resilience through the lens of SDT, while also highlighting the potential of OBS in mitigating the negative impact of HP on resilience.

Importance of Studying Resilience

Resilience has evolved from its roots in disaster prevention to encompass the adaptive capacities of societies and systems (Schwarz, 2018). Within the field of psychology, there has been a shift from solely focusing on psychopathology risk factors to recognising individual strengths (e.g., resilience) as protective factors (Davydov et al., 2010; Richardson, 2002). A plethora of studies have shown resilience is negatively linked to psychological problems such as stress, depression, and anxiety (Hu et al., 2015; McGarry et al., 2013; Shapero et al., 2019; Wu et al., 2020), while also positively linked to psychological well-being such as hope, life satisfaction, and happiness (Arslan, 2019; Satıcı, 2016; Yildirim & Belden, 2019). Importantly, resilient individuals exhibit greater psychological well-being and are less susceptible to negative emotions (Arslan et al., 2019; Haddadi et al., 2010; Shi et al., 2016). In this regard, resilience serves as an important psychological resource for individuals (Zhao et al., 2022).

The cultivation of resilience is an expectation for students in Singapore. Embedded within Singapore's framework of 21st century competencies and student outcomes, the core value of resilience is recognised as fundamental to nurturing well-rounded individuals who possess the ability to demonstrate emotional strength and perseverance in the face of challenges (Ministry of Education, 2023). Resilience can be reflected in various aspects of students' lives. Past research demonstrates that resilient students improve adjustment outcomes, such as better time management, academic results, self-regulation (Hartley, 2011; Johnson et al., 2015), and enhanced coping skills (Galatzer-Levy et al., 2012). Moreover, students with higher levels of resilience tend to effectively employ both internal and external resources when confronting adversities, compared to those with low resilience (Hartley, 2011;

Mcdermott et al., 2020). As a result, resilient students are less likely to encounter mental health, academic, and interpersonal problems. A study by Kwang and Tang (2011) found the need to foster greater resiliency amongst Singaporean students, highlighting the importance of family in promoting resilience. This aligns with prior research suggesting that the familial context significantly shapes a student's resilience development (Hall et al., 2021; Ungar, 2007). Certainly, resilience is not merely a stress response but cultivated gradually over time (Davydov et al., 2010). This raises questions about the ongoing impact of parents on resilience, whose influence extends across children's developmental milestones (Anaya & Pérez-Edgar, 2019; Clark et al., 2015; Denham et al., 2015; Grusec, 2011)

Additional challenges in resilience research arise from the discrepancy in the conceptualisation of psychological resilience (Fletcher & Sarkar, 2013). Resilience has been construed as either a stable personality trait or dynamic process (Child & Medvedev, 2023; Liu et al., 2017). However, constraining resilience to solely trait-like characteristics implies that individuals either inherently possess this ability or not. Recent research acknowledges that the development of resilience is influenced by the interaction between individuals and their dispositional and situational factors (Lock et al., 2020; Medvedev et al., 2017; Rutter, 2012). In other words, an individual's resilience may vary depending on the nature and severity of the stressors. On the other hand, some researchers maintain that viewing individuals as fixed collections of traits may reduce the perceived need for developmental research (Sameroff, 2010). Leading theorists have argued that resilience is not an innate personality trait limited to certain children but rather a flexible process influenced by varying circumstances (Garmezy, 1991; Luthar et al., 2000; Rutter, 2012; Masten, 2001; 2011; Masten et al., 1990). According to Gillespie et al. (2007) and Ungar et al. (2013), resilience is a characteristic of environment as much as of personality and can be acquired or enhanced at any stage of life. Trait resilience is thus deemed worthy of exploration within this paper. This

supports the use of resiliency questionnaires that measure both state and trait resilience. By assessing temporary responses to specific situations (i.e., *state resilience*) and enduring characteristics (i.e., *trait resilience*), this paper seeks to provide a comprehensive understanding of students' overall resilience capacity, particularly in relation to parenting.

Helicopter Parenting and Resilience

Parenting plays a vital role in building resilience among youths (Kritzas & Grobler, 2005; Zakeri et al., 2010). Resilient youths have frequently reported positive role modelling, consistent caring, and motivation support from their parents (Smokowski et al., 1999). Coherently, several studies have indicated that a positive parent-child relationship, particularly authoritative parenting, fosters resilience among youths (Doll & Lyon, 1998; Ritter, 2005; Zakeri et al., 2010). According to Wyman et al. (1999), authoritative parents are attuned to their children's needs, thus help children master significant challenges. However, excessively attending to children may deny them the opportunity to deal with life stressors independently (Darlow et al., 2017). This form of parenting is referred to as HP.

While typically well-intentioned, HP often manifests developmentally inappropriate levels of parental involvement, intrusion, and protection (Turner et al., 2023). Helicopter parents tend to excessively intervene in their children's lives in an attempt to solve their educational, social, and work-related difficulties (Kömürçü-Akik & Alsancak-Akbulut, 2021; LeMoyne & Buchanan, 2011; McGinley, 2018; McGinley & Davis, 2021). Stemming from marginal ends of the love and discipline child-rearing approaches (Yılmaz, 2019), helicopter parents strive to guide their children towards a more fulfilled life (Segrin et al., 2015) by shielding them from making mistakes (Carr et al., 2021). In contrast to its seemingly benevolent efforts, HP is detrimental to children's development and well-being (Evans & Karl, 2022). Indeed, previous studies have highlighted the serious consequences of HP such as academic, social, and psychological maladjustments (Shin & Adame, 2024; Darlow et al.,

2017; Luebbe et al., 2018; Hong & Cui, 2020), symptoms of anxiety and depression (Vigdal & Brønnick, 2022), substance use problems (Cook, 2020), narcissistic tendencies (Hayes & Turner, 2021; Yilmaz, 2019), and poor self-regulatory skills (Cui et al., 2018). Furthermore, despite previous mixed findings on parental gender differences in HP outcomes, recent research aligns on the importance of separately investigating the roles of maternal and paternal HP (Hwang et al., 2022a; 2024; Keerthigha et al., 2023). This supports the inclusive approach of individually analysing maternal and paternal HP models in this paper.

Several studies have demonstrated negative associations between HP and resilience (Hall et al., 2021; Locke et al., 2012; Low & Chong, 2023; Reilly & Semkovska, 2018; Seki et al., 2023). The behavioural patterns of HP impede children's acquisition of accountability, responsibility, and self-sufficiency—traits closely linked with resilience (Hamill, 2003; Okray, 2016; Ungar, 2009). Additionally, HP has been linked to decreased confidence in coping abilities (Odenweller et al., 2014) and increased dysfunctional coping practices (Segrin et al., 2013), suggesting that overparented children lack independent coping mechanisms, thereby thwarting the development of resilience. A study by Low and Chong (2023) suggests HP diminishes resilience levels by promoting a fixation on avoiding criticism. Specifically, the overprotective behaviour of helicopter parents leads children to fear negative evaluation when dealing with adversities independently. This restricts opportunities for them to develop resilience and confidence in their abilities. Given the detrimental impact of HP on resilience, there is a need for further exploration of other potential mediators through which HP induces these effects (Cui et al., 2022; Shin & Adame, 2024).

Basic Psychological Needs as Mediators

A growing body of research examines the fulfilment of basic psychological needs to explain the association between HP and student development (Cui et al., 2022). According to

Deci and Ryan (2000), all students have a set of three fundamental psychological needs that must be satisfied for optimal functioning: (i) *autonomy*, which refers to the ability to freely manage decision and behaviours, and experience psychological independence, (ii) *competence*, which refers to the sense of confidence in overcoming challenges and mastering challenging tasks, and (iii) *relatedness*, which refers to a sense of connectedness with others and the belief others value one. The SDT asserts that these fundamental psychological needs are inherent and responsible for shaping human motivation and well-being (Ryan & Deci, 2017). However, past studies suggest HP is a need-frustrating situation that jeopardises the well-being of students (Cook, 2020; Evans & Karl, 2022; Greene et al., 2019; Okray, 2016; Reed et al., 2016; Schiffrin et al., 2014; 2019a; 2021; Shin & Adame; 2024; Şimşir Gökalp, 2023; Wang et al., 2021). This necessitates attention to the mediating role of basic psychological needs in the relationship between HP and resilience.

Remarkably, no studies have explored the relationship between basic psychological needs, HP, and resilience. Instead, researchers have put forth theoretical explanations for this model. Low and Chong (2023) posit that helicopter parents undermine children's autonomy by constantly intervening in their challenges, consequently impacting competence development due to the children's limited experience in independently dealing with these challenges. Further, helicopter parents often show conditional positive regard by expecting their children to meet their standards for love and acceptance (Gill et al., 2018; Schiffrin & Liss, 2017; Segrin et al., 2015). While this results in short-term satisfaction for children (Kanat-Maymon et al., 2017), their resilience may diminish over time as they become overly sensitive to criticism thereby losing their ability to cope effectively with challenges.

Interestingly, the literature on basic psychological needs and resilience shows mixed findings, with some studies indicating positive associations (Liu & Huang, 2021; Neufeld & Malin, 2019; Xu et al., 2021) while others do not fully support the link to SDT (Diotaiuti et al.,

2021; Perlman et al., 2017). Given past inconclusive findings, Study 1 poses research questions (RQ) rather than a-priori hypotheses to examine the potential mediating effect of basic psychological needs on the relationship between HP and resilience.

RQ1: Do basic psychological needs mediate the relationship between maternal HP and state-trait resilience?

RQ2: Do basic psychological needs mediate the relationship between paternal HP and state-trait resilience?

Resilience Intervention Through Outdoor Education: Outward Bound Singapore

Researchers have shown increasing interest in developing interventions to boost resilience. Among interventions such as workplace training (Becker et al., 2017; Fägerstam, 2014; Forbes & Fikretoglu, 2018; Overholt & Ewert, 2015), counselling services (Khairina et al., 2020), and clinical interventions (Ewert & Yoshino, 2011; Hayhurst et al., 2015), outdoor education has gained traction as a resilience-building approach in recent years (Mackenzie et al., 2017; Shellman & Hill, 2017; Samsudin et al., 2019; 2021). An outdoor education program employs experiential learning methods in natural environments to engage participants in challenging situations (Booth & Neill, 2017). It entails structured exposure to adventurous activities (e.g., rock climbing and abseiling courses) with predetermined goals and objectives, enabling participants to identify their weaknesses, strengths, and personal values (Mackenzie et al., 2018), thereby enhancing their interpersonal and intrapersonal skills (Overholt & Ewert, 2015).

Research suggests that outdoor education can develop resilience (Ewert & Yoshino, 2011; Samsudin et al., 2019; 2021; Shellman & Hill, 2017). Owing to the challenges faced in a foreign environment, such as living and working with strangers, being away from friends and family, and participating in intense adventure-based activities, participants may experience a state of constructive anxiety that demands the use of a variety of coping

strategies (Ewert & Yoshino, 2011; Gloria & Steinhardt, 2016). According to the stress inoculation theory, prior exposure to optimal stress levels at crucial life stages can enhance resilience and thus improve one's ability to cope with everyday stressors (Ashokan et al., 2016). Despite the mounting evidence of stress inoculation contributing to resilience (Ayash et al., 2020; Wu et al., 2013), research on the effectiveness of outdoor education in improving resilience is limited (Ewert & Yoshino, 2011; Rutter, 2012). Moreover, studies examining outdoor education and resilience have yielded mixed results (Booth & Neill, 2017), emphasising the need to continue examining the long-term impact of outdoor education on both state and trait resilience levels.

The OBS is arguably the foundation of outdoor education in Singapore (Martin & Ho, 2009). It is integral to Singaporean students' holistic development and aims to foster creative problem-solving skills, character building, leadership, and teamwork, which may not be emphasised in mainstream Singaporean education (Gassner & Russell, 2008). Low (2007) highlights that Singapore's historical context (e.g., limited resources and intense global competition) and its geographical and economic constraints have cultivated a strong emphasis on resilience among its citizens. In support of the nation's call for building a resilient society, the Ministry of Education formalised OBS programs, providing all students with outdoor adventure learning experiences primarily aimed at developing resilience among other outcomes such as confidence and citizenship (Outward Bound Singapore, 2021). While the expressed objectives of OBS are positive, it is imperative to evaluate the effectiveness of such interventions for participants systematically. Beyond anecdotal evidence (Martin & Ho, 2009), there is a pressing need for evidence-based program evaluation of the OBS program in building resilience. More critically, Ang et al. (2014) stand as the only inquiry of OBS's outcome evaluation, focusing on school engagement.

Evaluating outdoor education programs poses significant challenges due to numerous uncontrollable confounding variables (Ewert & Sibthorp, 2009). However, there is a call for the consideration and using of quasi-experimental designs that resemble true experiments, even if researchers must deviate from ideal research methods (e.g., random assignment) due to practical constraints. Therefore, Study 2 employs a non-equivalent groups design to assess the effectiveness of the OBS program, with a control group providing an untreated comparison. The control group also accounts for the potential influence of the elapsed time on intervention effectiveness and may be used to address the social and developmental ramifications of withholding the intervention from students. Due to limited literature on the impact of OBS on resilience, Study 2 poses the following RQ to investigate the effectiveness of OBS on state-trait resilience: Does OBS improve state-trait resilience from pre-test to post-test? Study 2 includes a supplementary investigation to determine if the effects observed at the post-test are maintained during a follow-up assessment.

Overview of Studies

Building upon these two distinct yet interconnected studies, this paper comprehensively examines the interplay between parenting style, psychological needs, and OBS in cultivating resilience. Study 1 examines the mediation effect of basic psychological needs (i.e., autonomy, competence, and relatedness) on the relationship between maternal/paternal HP and state-trait resilience. The present inquiry delves into the mechanisms that underlie the impact of HP on resilience, with a specific focus on the pivotal role of psychological needs satisfaction in the development of resilience.

To evaluate the effectiveness of the OBS program, Study 2 analyses state-trait resilience scores at two different time points. This pre-post study enables researchers to observe any changes in resilience levels following the intervention, providing evidence-based

insights into the effectiveness of the OBS program. Overall, the main aim of this paper is to examine the role of HP and OBS in resilience development among students.

General Methodology

Participants and Design

An online survey study with a non-equivalent groups design included a total of 116 Singaporean students from Republic Polytechnic School of Sports, Health and Leisure (RP SHL) with an age range of 16-24 years ($M = 18.84$, $SD = 1.91$). Students enrolled in the 5-day residential OBS program constituted the experimental group ($n = 21$), whereas those who did not participate served as the control group ($n = 95$). The demographic information is presented in Table 4.1.

Table 4.1

Demographic Characteristics of the Participants

Variables	% (N)
Experimental	18.1 (21)
Control	81.9 (95)
Ethnicity	
Chinese	53.4 (62)
Malay	26.7 (31)
Indian	12.1 (14)
Other	7.8 (9)
Gender	
Male	44.8 (52)
Female	53.4 (62)
Unspecified	1.7 (2)
Monthly Household Income	
Less than \$5,000	37.1 (43)
\$5,000-\$19,999	51.7 (60)
\$20000-\$49999	7.8 (9)
\$50000-\$99999	3.4 (4)
Household Type	
1-room/2-room HDB	1.7 (2)
3-room/4-room HDB	50.9 (59)
5-room/Executive HDB	31 (36)
Condominium & Other Apartments	12.9 (15)
Landed Properties	3.4 (4)

Measures

Information on Parental Figures

Participants were instructed to identify two parental figures (e.g., mother, father, or other) based on the following definition: “A ‘parental figure’ is a person who is regarded as having all or some of the characteristics of a parent. Despite its literal term ‘parent’, this role is not limited to the biological parent of an individual but may be played by others such as uncles/aunts, grandparents, older siblings, or others.” Participants uniformly designated Parental Figure 1 as their ‘mother’ and Parental Figure 2 as their ‘father’. Research suggests HP practices are more prevalent among parents who work from home during the COVID-19 pandemic (Keerthigha et al., 2023) and those with higher educational qualifications (Somers et al., 2010). Therefore, a short form was used to collect data on the number of days per week each parental figure worked from home and their highest level of education, which served as covariates to be controlled for. The information is summarised in Table 4.2.

Table 4.2

Highest Education Qualification and Work-from-home (WFH) Days of Parental Figures

Covariates	Mother % (N)	Father % (N)
Highest Education Qualification		
No Qualification/ Pre-primary/ Lower Primary Education	6 (7)	7.8 (9)
Primary Qualification	5.2 (6)	11.2 (13)
Lower Secondary Qualification	1.7 (2)	1.7 (2)
Secondary Qualification	25.9 (30)	12.1 (14)
Post-Secondary Qualification (Non-Tertiary)	14.7 (17)	11.2 (13)
Polytechnic Diploma	24.1 (28)	26.7 (31)
Professional/Vocational Qualification	0.9 (1)	4.3 (5)
Bachelor’s or Equivalent	10.3 (12)	10.3 (12)
Postgraduate Diploma/ Certificate Qualification	2.6 (3)	6.9 (8)
Master’s and Doctorate or Equivalent	8.6 (10)	7.8 (9)
Number of WFH Days		
0 of 7 days	66.4 (77)	56.9 (66)
1 of 7 days	5.2 (6)	6 (7)
2 of 7 days	3.4 (4)	8.6 (10)

Covariates	Mother % (N)	Father % (N)
3 of 7 days	7.8 (9)	6 (7)
4 of 7 days	1.7 (2)	1.7 (2)
5 of 7 days	4.3 (5)	7.8 (9)
6 of 7 days	0 (0)	5.2 (6)
7 of 7 days	11.2 (13)	7.8 (9)

Maternal HP and Paternal HP

The 10-item consolidated helicopter parenting scale (CHPS; Schiffrin et al., 2019b) assessed participants' perceived levels of HP for their parental figures (e.g., "My mother/father overreacts when I encounter a negative experience"; Appendix C). Items from the original CHPS measure were re-worded to ask about mothers and fathers separately. Participants responded on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Mean scores range from 1 to 5, with higher scores indicating a higher level of perceived HP. The Cronbach α for the CHPS is .92 (Schiffrin et al., 2019b), indicating excellent internal consistency.

State-Trait Assessment of Resilience Scale

The 13-item state-trait assessment of resilience scale (STAR; Lock et al., 2020; Appendix H) assessed participants' psychological resilience based on how resilient they felt at the time of survey completion (state resilience; 6 items, e.g., "at the moment I can cope with any difficulties I might face in my life") and in general (trait resilience; 7 items, e.g., "generally, when others may give up, I stand strong and keep fighting."). Participants respond on a 4-point Likert scale from 1 (*disagree*) to 4 (*strongly agree*). Mean scores range from 1 to 4, with higher scores indicating a higher level of resilience. The Cronbach α for the STAR is .96 for the state measure and .94 for trait measure (Lock et al., 2020), indicating excellent internal consistencies.

Basic Psychological Needs Scale

The 21-item basic psychological needs scale (BPN; Deci & Ryan, 2000; Gagné, 2003; Appendix I) assessed participants' satisfaction of the needs for autonomy (7 items, e.g., "I feel like I am free to decide for myself how to live my life"), competence (6 items, e.g., "people I know tell me I am good at what I do:), and relatedness (8 items, e.g., "I get along with people I come into contact with"). Participants respond on a 7-point Likert scale from 1 (*not at all true*) to 4 (*very true*). Nine items were reverse coded and sample reverse-coded items from the scale include "in my daily life, I frequently have to do what I am told" (autonomy), "I often do not feel very capable" (competence), and "I pretty much keep to myself and don't have a lot of social contacts" (relatedness). Mean scores range from 1 to 7, with a higher score indicating a higher need fulfilment. The Cronbach α for the BPN is above .7 for all three subscales (Gagné, 2003), indicating acceptable internal consistencies.

Sociodemographic Form

Several demographic variables were measured including age, sex, ethnicity, household type, and family's average monthly household income, as reported in Table 4.1.

OBS Programme

Located on Pulau Ubin, participants engaged in a five-day residential camp, blending indoor and outdoor activities facilitated by OBS camp instructors (Outward Bound Singapore, 2021). Outdoor activities included ropes courses with high and low elements, land/water-based adventures, and peer activities, where participants faced physical and mental challenges requiring problem-solving and teamwork skills. Facilitators led group discussions and debriefings to help participants reflect on their experiences, draw lessons from overcoming challenges, and apply these lessons to their lives.

Procedure

Ethical clearance for the study was granted by the Human Research Ethics Committee at James Cook University, Australia (Ref. H9086; Appendix J). Research posters containing a registration link were distributed to students via email by the RP SHL program coordinator. The Qualtrics site included a brief study information, a screening questionnaire, and requested eligible students to provide their school email address. Data collection was conducted using Qualtrics. The pre-post surveys were conducted over a two-week period, with a supplementary follow-up test two weeks after the post-test (see Figure 4.1). The researcher disseminated the survey links to participants via email, allowing a two-day period for completion. Identifying the same participants at each timepoint was crucial for data matching and comparison over time, thus participants were instructed to enter their unique identifier code (i.e., the last 3 digits and alphabet of their national registration identity card in Singapore) on all surveys. Survey timepoint 1 included all aforementioned measures, while timepoints 2 and 3 only included the STAR and BPN measures. Participants were given the option to continue or exit the survey after reviewing the study information, with informed consent assumed if they proceeded. Each survey took no longer than 20 minutes to complete. Following each survey, verified participants received SGD20 via their PayNow-registered mobile number and a subsequent mobile message was sent to confirm the successful fund transfer. The data were analysed using SPSS Version 27 with the alpha level set at 0.05.

Study 1: Results

Table 4.3 presents the intercorrelations, descriptive statistics, and reliability coefficients of maternal HP, paternal HP, state resilience, trait resilience, and basic psychological need of autonomy, competence, and relatedness at timepoint 1. The present study revealed no statistically significant association between trait resilience and maternal HP ($p = .8$) and between trait resilience and paternal HP ($p = .2$). In other words, there is no

evidence that HP influences trait resilience. Therefore, the variable ‘trait resilience’ was omitted from the subsequent analyses.

Test of RQs

Two parallel multiple mediation analyses were estimated using ordinary least square path analysis to determine the effect of maternal/paternal HP on state resilience through the basic psychological needs (i.e., autonomy, competence, relatedness), whilst controlling for the parent’s highest education qualification and number of WFH days in the model. This model was calculated using PROCESS Model 4 (Hayes, 2018) to estimate the three indirect effects in parallel to control for the unique variance explained by each mediator; 5,000 bootstrap samples were used for the bias-corrected 95% confidence interval (CI). Following MacKinnon (2012), mediation can be inferred if the indirect effect (IE), calculated as the product of paths a and b , is statistically significant and its bias-corrected 95% confidence interval excludes zero. A significant relationship between the IV and DV (path c) is not required for examining the hypothesised mediation.

RQ1: Maternal Model of HP

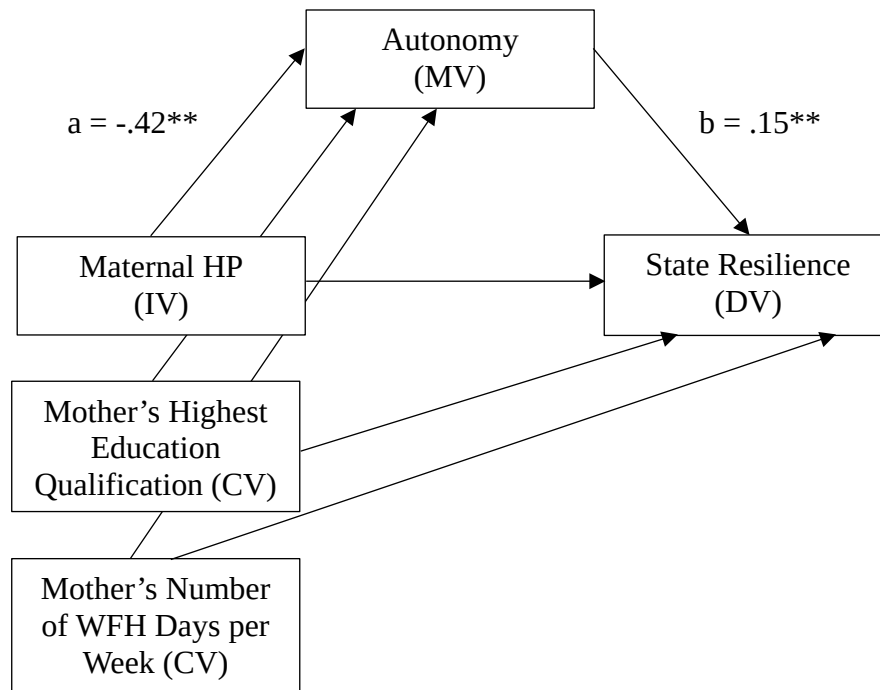
The total indirect effect was $-.079$ (95% CI: $[-.176, .007]$) with a completely standardized (CS) total indirect effect of $-.11$ (95% CI: $[-.243, .011]$). Indirect effects and bootstrapped CIs were as follows: autonomy ($ab = -.066$, 95% CI: $[-.154, -.004]$; $ab_{cs} = -.092$), competence ($ab = -.013$, 95% CI: $[-.054, .017]$; $ab_{cs} = -.018$), and relatedness ($ab = -.0002$, 95% CI: $[-.0002, .01]$; $ab_{cs} = -.0003$). The bootstrapped CI excludes zero for only the mediation effect of autonomy, suggesting a single mediation model. In other words, maternal HP decreases state resilience through decreased autonomy, indicating partial support for RQ1. Results are presented in Figure 4.2.

RQ2: Paternal Model of HP

The total indirect effect was $-.086$ (95% CI: $[-.161, -.022]$) with a completely standardised (CS) total indirect effect of $-.137$ (95% CI: $[-.253, -.036]$). Indirect effects and bootstrapped CIs were as follows: autonomy ($ab = -.024$, 95% CI: $[-.091, .032]$; $ab_{cs} = -.052$), competence ($ab = -.043$, 95% CI: $[-.108, .001]$; $ab_{cs} = -.069$), and relatedness ($ab = -.019$, 95% CI: $[-.058, .004]$; $ab_{cs} = -.031$). The bootstrapped CIs contain zero, indicating a lack of mediation in the paternal model, thus no support for RQ2.

Figure 4.1

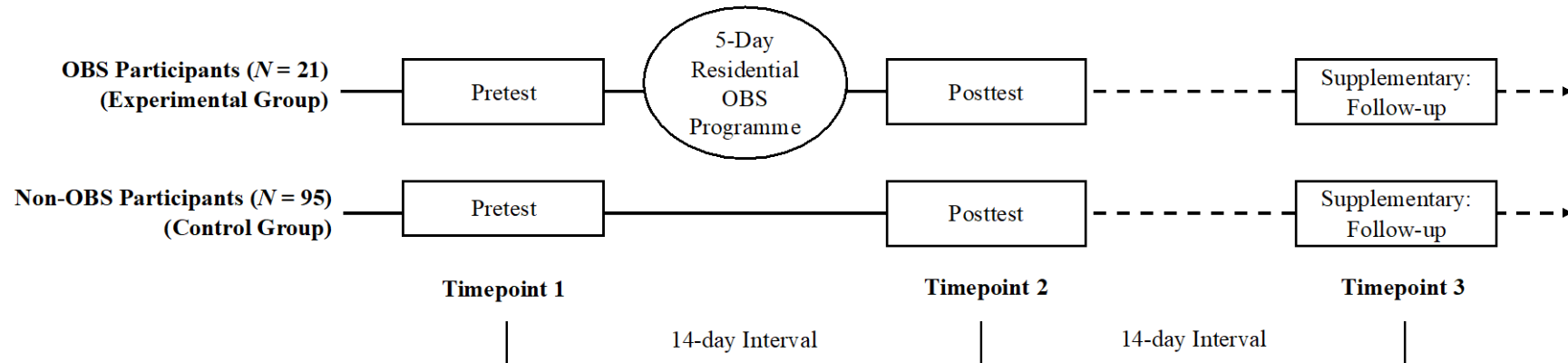
Partial Mediation Effect of Autonomy on the Relationship Between Maternal HP and State Resilience Whilst Controlling for Mother's Highest Education Qualification and WFH Days



Note. $*p < .05$; $**p < .001$; HP: Helicopter Parenting

Figure 4.2

Timeline of the Two-Week Pre-Post Study with Supplementary Follow-up

**Table 4.3**

Intercorrelations, Descriptive Statistics, and Reliability Coefficients of Maternal HP, Paternal HP, State Resilience, Trait Resilience, and Basic

Psychological Needs at Survey Timepoint 1 (N = 116)

Variable	1	2	3	4	5	6	M	SD	Reliability Coefficients
1. Maternal HP	-	-	-	-	-	-	2.96	.75	.86
2. Paternal HP	.47**	-	-	-	-	-	2.74	.86	.90
3. State Resilience	.07	-.21*	-	-	-	-	2.41	.54	.60
4. Trait Resilience	.02	-.12	.62**	-	-	-	2.29	.48	.62
5. Autonomy	-.35**	-.44**	.35**	.07	-	-	4.51	.89	.68
6. Competence	-.11	-.29**	.36**	.19*	.64**	-	4.43	.93	.66
7. Relatedness	.004	-.22*	.31**	.18	.43**	.48**	4.80	.84	.69

* $p < .05$; ** $p < .001$; HP: Helicopter Parenting

Discussion: Study 1

Study 1 examined the mediating effect of basic psychological needs on the relationship between maternal/paternal HP and state-trait resilience. Trait resilience was omitted from the study because its correlations with maternal HP ($p = .80$) and paternal HP ($p = .2$) were not statistically significant. The results provided a partial affirmative test for the RQs. Specifically, maternal HP diminished state resilience through a decrease in autonomy, with no observed mediating influence through competence and relatedness. Furthermore, there was no mediation effect of basic psychological needs on the relationship between paternal HP and state resilience. This underscores the prominence of maternal HP over paternal HP and the importance of autonomy-granting parenting styles in fostering resilience.

No Association between HP and Trait Resilience

The findings indicated maternal and paternal HP did not correlate with trait resilience. This supports the definition proposed by Ungar et al. (2013) that trait resilience is shaped by cumulative experiences of adverse life events. In other words, trait resilience represents enduring individual characteristics and learned coping strategies that are not easily influenced by immediate environmental factors such as HP behaviours. This stresses the importance of considering the broader socio-cultural context in which resilience endures, encompassing both intrinsic factors (e.g., coping skills) and extrinsic factors (e.g., social support). These resources must be accessible and relevant to the individual, shifting the focus from viewing trait resilience solely as dispositional to highlighting the importance of establishing supportive environments for positive growth (Ungar, 2008).

Maternal HP Decreases State Resilience by Decreasing Autonomy

Prominence of Maternal Models in HP

Consistent with past findings (Fingerman et al., 2012; Pleck, 2012; Rousseau & Scharf, 2015; Scharf et al., 2017; Schiffrin et al., 2013; 2019a; van Ingen et al., 2015), Study

1 demonstrated a statistically significant mediation model involving maternal HP, but not paternal HP. This finding may be explained by the gender intensification theory, which posits mothers' greater involvement in their children's daily lives and decision-making processes compared to fathers (Fingerman et al., 2020; Love et al., 2019; Rousseau & Scharf, 2015; Schiffrin et al., 2019; Willoughby et al., 2015) stem from women's prioritisation of interpersonal relationships (Davies & Lindsay, 2004). Furthermore, research consistently reveals individuals primarily reference their mothers when discussing parents (Keerthigha et al., 2023; Pleck, 2012; Schiffrin et al., 2013; 2014).

Maternal HP and Resilience

Studies have uniformly indicated that closeness to mothers, not fathers, buffered adverse life events, indicating mothers' primary role in promoting children's resilience (Fenning & Baker, 2012; Ge et al., 2009; Laucht et al., 2002). However, contrary to earlier findings, recent studies suggest fathers also play a significant role in resilience development (Feldman, 2023; Li & Tian, 2018; Mahedy et al., 2018; Malmberg & Flouri, 2011; Yu et al., 2021). Masten (2014) highlights the vital importance of parental warmth in fostering resilience. Indeed, both mothers and fathers can engage in warm HP behaviours, although maternal HP tends to involve more warmth than paternal HP (Padilla-Walker et al., 2019; Rote et al., 2020), which may inadvertently promote resilience. It may thus be the case that within this sample, there is a larger proportion of perceived warm helicopter mothers than perceived warm helicopter fathers, contributing to statistically significant mediation model involving maternal HP, but not paternal HP.

Autonomy and Resilience

Contrary to past findings (Liu & Huang, 2021; Neufeld & Malin, 2019; Xu et al., 2021), the study revealed that only the basic psychological need of autonomy (not competence or relatedness) mediated the relationship between maternal HP and resilience.

This may be explained by autonomy's direct relation to resilience, highlighting an individual's capacity to take control of their experiences and responses to adversity in ways that align with their values and preferences (Reeve et al., 2020; Salazar-Ayala et al., 2021). This sense of personal agency and self-determination is essential for building resilience because it allows individuals to cope with their stressors authentically and meaningfully. In contrast, competence equips individuals with skills, resources, and confidence to navigate challenges effectively and relatedness enhances their ability to withstand and recover from difficulties through social support systems. While competence and relatedness play important roles in promoting well-being (Ryan & Deci, 2017) and may support resilience (Liu & Huang, 2021; Neufeld & Malin, 2019), autonomy is particularly salient in fostering the internal resources required to overcome challenges, which provides the foundation for effectively navigating (competence) and recovering from (relatedness) challenges.

The degree to which students perceive themselves as autonomous could explain, at least in part, how maternal HP influences their resilience. Negotiating autonomy can be challenging for both students and parents. Hall et al. (2014) recommend helicopter parents foster open communication with their children to build resilience. Paradoxically, frequent conversations might not yield positive outcomes because students may perceive their parents as overbearing (Schiffrin et al., 2014). Therefore, reframing parental involvement as helpful rather than intrusive could be beneficial. This underscores the importance of communicating the well-intentioned meaning behind parenting behaviours (Cheung & Lim, 2022) and openly discussing expectations (Keerthigha et al., 2023). Such communication allows parents to adjust their behaviours while enabling children to better understand their parents' intentions (Hammonds, 2015). Additionally, the findings highlight the importance of mothers adopting autonomy-supportive parenting. Parental autonomy support refers to how parents value and employ techniques that foster autonomous problem-solving, decision-making, and self-

determination in their children (Wong, 2008). Certainly, Jung et al. (2020) demonstrate that mothers, regardless of location or cultural background, positively influence student well-being when they provide high levels of support for their autonomy. Therefore, it is evident from this study that mothers fostering autonomy and open communication significantly contributes to students' resilience.

Results: Study 2

Main Findings

Two paired samples t-tests were conducted to investigate the effectiveness of the OBS programme ($n = 21$) on resilience from pre-test to post-test. First, the results indicated a statistically significant difference in *state resilience* score between pre-test ($M = 2.35$, $SD = .51$) and post-test ($M = 2.62$, $SD = .29$), $t(20) = 2.81$, $p = .005$. To establish causality, the state resilience of the control group ($n = 95$) was also assessed. The results indicated no statistically significant difference in state resilience score between pre-test and post-test ($p = .47$). These findings suggest that the OBS program led to a significant improvement in state resilience.

Second, the results indicated no statistically significant difference in *trait resilience* scores between pre-test and post-test ($p = .19$). Within the control group ($n = 95$), there was also no statistically significant differences in trait resilience score between pre-test and post-test ($p = .74$). These findings suggest trait resilience remained stable over time, indicating no change despite the intervention. Taken together, the results provide only partial support for the RQ.

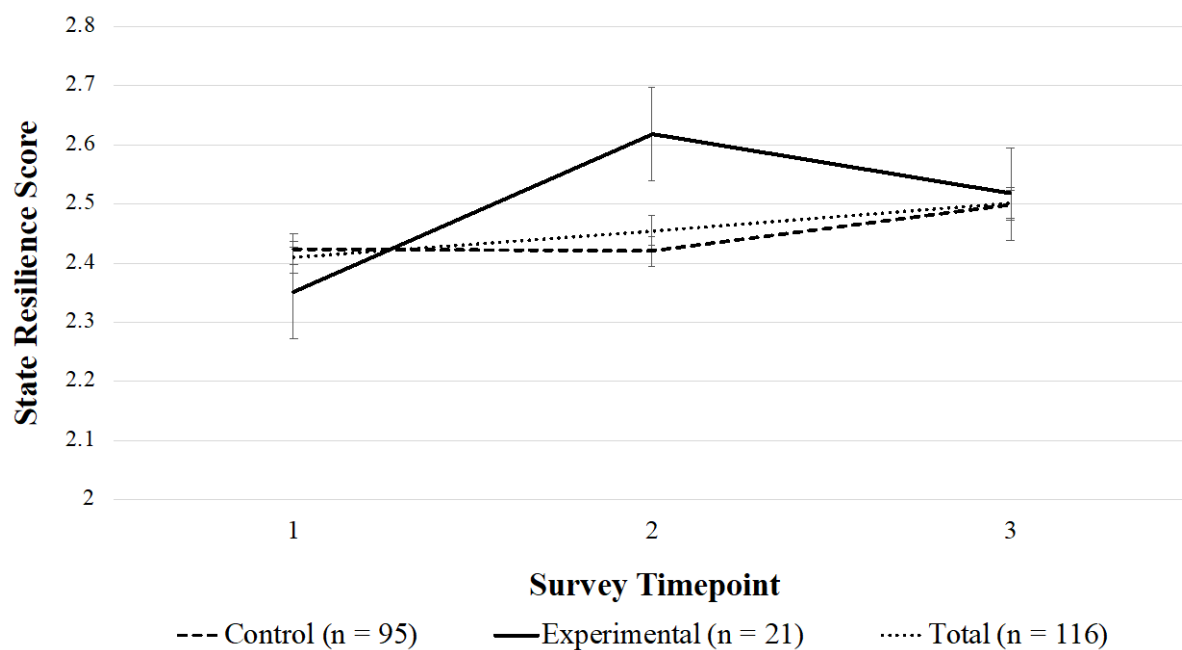
Supplementary Findings

To explore if any observed effects of OBS had endured over time, a follow-up evaluation was included. A paired samples t-test compared post-test and follow-up state resilience scores given the statistically significant difference observed between its pre-test

and post-test scores ($p = .005$). The results indicated no statistically significant difference in state resilience between post-test and follow-up in both experimental group ($p = .13$) and control group ($p = .06$). This lack of statistically significant improvement from post-test to follow-up suggests a potential decline or fading of the intervention effects over time. The overall results of Study 2 are illustrated in Figure 4.3.

Figure 4.3

Effectiveness of the 5-day Residential OBS Programme on State Resilience Score



Discussion: Study 2

Study 2 investigated the effectiveness of OBS on state-trait resilience in students from pre-test to post-test, comparing an experimental group who attended the program to a control group who did not. The positive effect of the OBS program on state resilience was evident in the experimental group. Additionally, there was no significant changes in trait resilience across both groups, underscoring the complexity of resilience as a trait. Although this effect appeared to be transient as there was no sustained improvement observed in the follow-up evaluation, the findings offer empirical support for the effectiveness of the OBS program in building student resilience.

Effectiveness of Outward Bound Singapore

While this paper asserts that resilience arises from developmental influences such as HP, research indicates that challenge-based experiential learning programs like OBS can effectively assist individuals (Ewert & Yoshino, 2011; Samsudin et al., 2019, 2021; Shellman & Hill, 2017). The findings consistently demonstrate a significant improvement in state resilience among participants of the OBS program, reinforcing its efficacy in cultivating vital psychological resources (Zhao et al., 2022). This evidence-based support underscores the program's value in equipping students with essential tools to navigate challenges effectively and illuminates the importance of resilience-building interventions within educational contexts. The supplementary findings, however, elucidate the transient nature of the observed effect. This raises questions about the long-term effectiveness and durability of the OBS program.

Transient Effect of OBS

The relatively short duration of the program (lasting only five days) may explain the short-term impact of OBS (Ang et al., 2014). A meta-analysis of Outward Bound programs revealed that the most significant positive effects were observed in interventions lasting 20 days or more (Hattie et al., 1997). Therefore, the absence of a sustained increase in state resilience in this study suggests that the short duration of the program diminished its effectiveness, potentially resulting in less enduring benefits. Further, the effectiveness of the OBS program may have been hindered by the extent to which learning from outdoor education settings translate to real-world situations. Several factors influence the facilitation of transfer, including learner characteristics, intervention design and delivery, and transfer climate (Sibthorp et al., 2011). This highlights the necessity for continuous reinforcement and practice to maintain the skills and resilience acquired during the OBS program. Perhaps, booster programs may offer valuable insights into maintaining and extending the

positive effects of the OBS program beyond the immediate post-intervention period.

Principles of social learning theory suggest long-term retention of learning depends on factors such as the nature of the information, the learner's motivation, and the extent of rehearsal or practice (Latham & Saari, 1979). Notably, conducting research within a Polytechnic setting poses significant challenges due to its structured curriculum and demanding workload (e.g., assignments and co-curricular obligations), as observed in the limited enrolment in the experimental group in Study 2. This necessitates further examination of systemic constraints, as literature suggests insufficient organisational support can diminish training effectiveness (Hughes, 2016). Moss (2021) highlights heavy workload impedes training effectiveness. This underscores the importance of systematically integrating training programs into the educational curriculum, rather than as ad-hoc efforts. This holistic approach integrates social support from ministries and educational institutions to foster youth development, moving beyond attributing long-term training effectiveness solely to program delivery. While Study 2 contributes to the increasing body of evidence supporting the effectiveness of OBS programs in addressing student outcomes, ensuring the sustainability of these effects requires longer program durations, effective measures for transfer of learning, and further support from ministerial bodies and educational institutions.

Trait Resilience Resistance

The findings revealed trait resilience remained unchanged over the course of the study, irrespective of whether students were assigned to the experimental or control group. This corroborates the findings of Study 1, suggesting that trait resilience is resistant to immediate environmental factors. The whole-trait theory (Fleeson & Jayawickreme, 2015) and TESSERA framework (Wrzus & Roberts, 2017) posit that trait resilience emerges from the interaction between state resilience and specific situations. Accordingly, interventions

targeting trait changes should focus on enabling students to experience repeated state resilience across various situations (i.e., transfer of learning). Ultimately, transitory changes in state resilience will impact enduring trait resilience over time (Child & Medvedev, 2023; Kuldas & Foody, 2021; Miller et al., 2021). This advocates prioritising intervention design and delivery that target the dynamic aspect of student resilience, transcending mere dispositional perspectives of resilience (Ungar et al., 2013).

Overall Discussion

This paper sought to investigate the impact of HP on state-trait resilience. Specifically, two studies were employed to examine the mediation effects of the basic psychological needs (i.e., autonomy, competence, and relatedness) on the relationship between maternal/paternal HP and state-trait resilience (Study 1) and the effectiveness of OBS in building state-trait resilience (Study 2). The overall findings shed light on the interplay between HP, basic psychological needs, and resilience, providing valuable insights into strategies for fostering resilience in students. The following sections will first discuss the two studies and their broader implications on the HP literature. Next, highlight the paper's overall contributions, limitations, and directions for future research will be highlighted.

Key Findings

Study 1 revealed maternal HP decreases state resilience in students by decreasing their autonomy. This highlights the pivotal role of mothers in creating an autonomy-supportive environment essential for equipping their children with the necessary skills to confront and overcome challenges. The finding reaffirms feeling autonomous is an important universal foundation for the positive development of youths, enabling them to achieve improved psychological functioning in school (Turner et al., 2023). Additionally, the finding corroborates past research indicating variations in HP behaviours between mothers and fathers, with mothers generally perceived as having a more substantial influence on their

children and their maladaptive outcomes (Hwang et al., 2022a; McGinley & Davis, 2021; Nelson et al., 2015; Schiffrin et al., 2019a; van Ingen et al., 2015). These insights inform resilience-building intervention strategies that emphasise open communication and the effective utilisation of parental involvement while still maintaining appropriate levels of autonomy for the student.

In line with this, Study 2 presented encouraging empirical evidence for a resilience-building intervention that underscores the stress-inoculation theory applied in OBS. While the improvement in state resilience was transient, far more systematic program evaluation of OBS is warranted. Pending further research, educational interventions like OBS continue to support students in navigating challenges and thriving in various aspects of their lives (Ang et al., 2014; Gassner & Russell, 2008; Low, 2007; Martin & Ho, 2009). Furthermore, conducting rigorous evaluations of learning transfer from outdoor educational interventions refines and optimises ministerial policies to better support students' adaptive outcomes. In contrast to previous research's dualistic approach to resilience (Kuldas & Foody, 2022), this paper advocates a transactional view, emphasising trait resilience as a blend of enduring individual characteristics and learned coping strategies. Although trait resilience remained relatively unaffected by immediate environmental factors such as HP and OBS, temporary changes in state resilience may impact trait resilience over time (Child & Medvedev, 2023; Kuldas & Foody, 2021; Miller et al., 2021). The complexity of this construct thus requires continuous research efforts.

Implications and Contributions

This paper holds implications for both parenting practices and educational interventions aimed at fostering resilience in youths. First, the findings emphasise the role of mothers in shaping children's autonomy and, subsequently, their resilience levels. By demonstrating the detrimental effects of HP on autonomy development, this paper continues

to stress the importance of practicing autonomy-supportive parenting style and open communication to support adaptive outcomes in students (Hall et al., 2014; Hammonds, 2015; Keerthigha et al., 2023). Second, the improvement observed in resilience among OBS participants highlights the potential of outdoor education in promoting character development. This finding echoes the Ministry of Education's commitment to holistic development beyond traditional classroom settings (Gassner & Russell, 2008; Martin & Ho, 2009). Acknowledging the significance of experiential learning, this paper recommends increased integration of outdoor education into formal curricula. By offering students opportunities to cultivate adaptive skills and apply them in real-world contexts, this approach better prepares them to navigate challenges and thrive in an increasingly complex society. This paper emphasises the importance of tailored interventions for youth to promote positive behaviour. While existing research has linked behavioural training to positive outcomes, structured intervention studies are essential to assess their effectiveness. This renders the rationale for Study 2 clear and compelling.

Limitations and Directions for Future Research

This paper, though noteworthy and significantly extends previous research, is not without its limitations. Three key issues that merit discussion include considerations regarding the potential bidirectional relationship between HP and resilience, the study design, and unequal group sizes. First, the relationship between HP and resilience may be complex and bidirectional, with low resilience levels potentially intensifying HP behaviours (Low & Chong, 2023). Bronfenbrenner's (1977) ecological systems theory posits that individuals are deeply intertwined with their environments, suggesting a reciprocal influence between individuals and their surroundings where both shape each other's development over time. In this sense, it can be argued that parents resort to HP behaviours when they observe their children struggling to overcome adversity, hoping that their intervention will yield positive

outcomes (Cui et al., 2018; Segrin et al., 2013; Fingerman et al., 2012). However, such actions can unintentionally impede children's ability to cultivate resilience, perpetuating a harmful cycle of dependency and diminished resilience. Given that this paper is grounded in correlational analyses, further research is essential to determine the bidirectional predictive effect of HP and resilience.

Second, while the utilisation of a quasi-experimental design, specifically a non-equivalent pretest-posttest control group with multiple post-tests design, is stronger than pretest-posttest only designs, this study cannot fully rule out all confounding variables and alternative explanations (Denny et al., 2017). Hence, it is important to interpret the findings cautiously. Future research should consider employing randomised controlled trials where feasible, continue to systematically evaluate outdoor education programs that are longer in duration (OBS or others), and examine a wider range of learning outcomes (e.g., confidence and citizenship; Outward Bound Singapore, 2021). Particularly in Asia, systematic program evaluations remain limited (Ang et al., 2014; Shek & Ng, 2010). Transitioning from mere anecdotal evidence to empirical data is crucial to determine the effectiveness and impact of these programs (Ewert & Sibthorp, 2009; Hattie et al., 1997). Drawing inspiration from the Outdoor Youth Programs Research Alliance in Australia (Williams et al., 2018a; 2018b), it is recommended that an outdoor education research committee be established within Singapore. This initiative could facilitate comprehensive assessments of experiential learning programs (not limited to OBS), elucidating their impact on academic learning and psychological well-being.

Third, the authors acknowledge that unequal group sizes between the control and experimental groups may have influenced the findings. Although equal sample sizes are ideal in research studies, this luxury is not always available in any given study (Oldfield, 2016; Riniolo, 1999). Given limited research opportunities with OBS participants, the authors

prioritised obtaining the best possible estimates of group differences. Cohen (1988) notes that small sample sizes constrain statistical precision regardless of the test used. Therefore, to address the constraint in OBS participants ($n = 21$), the strategy was to compare them with a larger control group as only its size could enhance statistical precision. While it is fair to critique that small sample sizes render studies unable to detect only the largest effects (Riniolo, 1999), recent research has shown that using unequal groups increases statistical power in a study (Guo & Luh, 2013; Mafirakurewa et al., 2023; Mora et al., 2023; Oldfield, 2016; Tichy & Chytry, 2006). Nevertheless, caution must be exercised when approaching the results and a larger experimental group sample is warranted to strengthen the conclusions.

Conclusion

This paper offered a dual-focused investigation into resilience development among students, exploring the interplay between HP, basic psychological needs, and OBS through the implementation of two research studies. By elucidating the mediating role of autonomy in the relationship between maternal HP and state resilience, findings underscore the importance of autonomy-supportive parenting styles in promoting resilience among students. In addition, the findings suggest that experiential learning programs like OBS can transiently improve state resilience. However, sustained improvements in state resilience and changes in trait resilience may require interventions that facilitate longer and repeated experiences of stress inoculation across various contexts. Recognising the bidirectional nature of HP and resilience, along with the limitations of the study design, highlights the need for further rigorous research. Overall, this paper provides valuable insights for educators, parents, and policymakers in designing effective interventions to enhance resilience among students, thus enabling them to navigate life's challenges effectively.

Chapter 5

General Discussion

This thesis explores the impact of HP on youths, including personal *experiences*, individual and societal *implications*, and *intervention* evaluation. Through a multi-method approach, the findings revealed HP's effects on youths' individual and social well-being. While not a cross-cultural comparison, this thesis provides valuable insights into how HP correlates with outcomes in Singapore. Based on the thesis findings, recommendations on parental practices and educational interventions to improve the developmental outcomes for youths are discussed. The following sections will discuss the findings and its contributions, theoretical and practical implications, limitations, and offer insights into future research directions.

Summary of Research Findings

Chapter 1: Theoretical Foundation of Thesis

Chapter 1 provided a theoretical background on the pivotal role of parents in socialisation (Clark et al., 2015; Denham et al., 2015; Gauvain & Parke, 2010; Grusec, 2011; Kuppens & Ceulemans, 2018), focusing on parenting styles that encompass a combination of parenting practices and dimensions that significantly impact child development (Baumrind, 1971; Maccoby & Martin, 1983). The contemporary parenting style, HP, was introduced and compared with traditional parenting styles, noting characteristics such as risk aversion, preoccupation with the child's happiness, and excessive problem-solving (Segrin et al., 2012). This chapter outlined the negative implications of HP on autonomy development, drawing on theories such as the SDT, the Circumplex Model of Family Systems, the Family Differentiation Theory, and the Family Systems Theory. However, the conflicting findings on HP outcomes underscored the influence of broader sociocultural contexts (Bornstein & Cheah, 2006; Chao & Tseng, 2002; Cheung & Lim, 2022; Harrison et al., 1990).

Subsequently, Chapter 1 discussed the inherent existence of HP in Asian societies (Padilla-Walker & Nelson, 2012; Rousseau & Scharf, 2015), particularly within Singapore where cultural values such as filial piety (Li et al., 2021), Kiasuism (Kirby et al., 2010), and meritocracy (Ellis, 2014) may contribute to its prevalence. Despite ministerial and educational efforts to deter parents from adopting HP practices in Singapore (Ministry of Education, 2017; Sin, 2017), there remains a notable absence of local-based empirical evidence on its impact. Therefore, this thesis sought to investigate the impact of HP on youths, particularly within Singapore's distinct cultural context. Overall, Chapter 1 established the groundwork for further exploration of HP by proposing research into the lived experiences of individuals raised by helicopter parents (Chapter 2), examining its broader impact on individual and societal well-being (Chapters 3 and 4), and proposing targeted interventions for positive youth development (Chapter 4).

Chapter 2: Insights from Text Analysis on Reddit

Chapter 2 explored Reddit users' experience with HP by identifying recurring themes among individuals subjected to this parenting style. The findings revealed four main domains, including environmental contexts, loss of control over college decisions, invasion of privacy, and impaired social relationships. First, environments like school, college, work, and home served as prime locations for encountering HP behaviors, potentially impeding autonomy, social adjustment, and psychological well-being of users (Etkin et al., 2021). Second, HP posed control over college decisions and this is manifested in terms of a lack of control over peer relationships, school, accommodation, and lifestyle choices among users. Past studies highlight the role of peer relationships in counteracting the effects of HP (Barry et al., 2016; van Ingen et al., 2015), prompting colleges to encourage independent decision-making and peer connections among students. Third, HP involved excessive parental monitoring of users both online and offline, leading to privacy invasion. Past studies address

legal ramifications of HP (Cutright, 2008), advocating for open communication and autonomy-supportive monitoring to foster healthier parent-child relationships (Hammonds, 2015; Son & Padilla-Walker, 2022). Last, HP interfered with users' social relationships, underscoring the importance of adopting autonomy-supportive parenting to promote healthier relationship formation and maintenance. Additionally, the findings confirm that mothers were more frequently associated with HP behaviors compared to fathers, indicating a need for further exploration of gender differences in parenting roles. The surge in HP behaviors during the COVID-19 pandemic underscores the urgency of addressing its impact on parenting outcomes.

Chapter 3: Quantitative Study Examining HP in Singapore

Chapter 3 focused on studying the impact of HP on the Singaporean sample. Within this chapter, youths rated on a specific dimension of social judgment, *other-profitability*, juxtaposing egocentric selfishness with prosocial behavior concerning their societal impacts. The first part of the chapter found that paternal HP moderated the relationship between maternal HP and egocentric selfishness, aligning with prior research on co-parenting consistency, which associates negative co-parenting with adverse outcomes (Berkien et al., 2012; Dwairy, 2008; 2010; Kara et al., 2022). However, the association between maternal HP and egocentric selfishness is weakened as paternal HP increases, possibly due to youths perceiving HP as appropriate when both parents exhibit similar levels (Rote et al., 2020). Perceptions of parenting are influenced by normativity, with increased exposure to specific parenting behaviors fostering positive views among youths (Barnett et al., 1996; Gershoff et al., 2010). This concurs with previous research proposing that the functionality of parenting is contextual, as evidenced by Singaporean children perceiving strict parenting and control as traditional practices rooted in Asian heritage (Cheung & Lim, 2022), proposing HP is likely more acceptable in the Asian region.

The second part of Chapter 3 found that relatedness mediated the relationship between maternal/paternal HP and prosocial behavior, contradicting previous research suggesting no direct association between HP and prosociality. Indeed, relatedness remains a critical determinant of prosocial behavior (Hodge & Gucciardi, 2015; Pavey et al., 2011; Shiraki & Igarashi, 2018; Tian et al., 2018; Yang et al., 2019). However, the finding suggests that while HP may enhance relatedness among youths through factors like frequent communication and modelling positive social engagement (Arroyo et al., 2012; Barbato et al., 2003), it is paradoxically associated with decreased prosocial behavior. This suggests that despite the potential benefits of increased relatedness, the negative impact of HP on prosocial behavior outweighs its positive effects, indicating that factors beyond relatedness, such as the competitive climate of Singapore (David et al., 2021), may hinder the development of a prosocial society. Although Chapter 3 stresses the pivotal role parents play in socialisation, it is equally important to acknowledge the cultural nuances in Singapore that contribute to a prosocial society. Indeed, the mutual inclusivity of HP and culture underscores the intricate nature of research on HP, particularly in its role in promoting other-profitability.

Chapter 4: Pre-post Evaluation of OBS Intervention

Chapter 4 examined the impact of HP on state-trait resilience, with a focus on the mediating role of basic psychological needs and the intervention effectiveness of OBS in enhancing resilience. Maternal HP diminished state resilience by reducing autonomy in students, while paternal HP showed no significant effect. This underscores the importance of maternal involvement in shaping resilience, likely due to their greater role in children's lives (Fingerman et al., 2020; Love et al., 2019; Rousseau & Scharf, 2015; Schiffrin et al., 2019; Willoughby et al., 2015). Furthermore, autonomy, among the basic psychological needs, emerged as the sole mediator in the relationship between maternal HP and state resilience, highlighting its primary role in facilitating the ability to cope with adversity in an authentic

and meaningful manner. While competence and relatedness are essential for well-being (Ryan & Deci, 2017), they play secondary roles in nurturing internal resources to effectively navigate and recover from challenges. The findings suggest mothers adopt autonomy-supportive parenting (Jung et al., 2020), advocating for open communication and positive reframing of parental involvement (Hammonds, 2015; Keerthigha et al., 2023). This aligns with prior research on the importance of conveying the well-intentioned meaning of parenting behaviors to children in Singapore (Cheung & Lim, 2022).

The intervention evaluation demonstrated that the OBS program effectively improved state resilience in youths. However, supplementary findings demonstrated this effect was transient and may not be sustained over a longer period. As with prior research (Ang et al., 2014; Hattie et al., 1997; Sibthorp et al., 2011), the findings recommend longer interventions, continuous reinforcement through potential booster programs, optimal settings for transfer of learning, and support from ministerial and educational bodies to yield more enduring benefits. The findings criticise the lack of systematic evaluations of experiential learning programs in Asia and the necessity of relying on empirical data rather than anecdotal evidence. Drawing from a successful model in Australia (Williams et al., 2018a; 2018b), establishing an outdoor education research committee in Singapore to assess experiential learning programs enhances stakeholders' understanding of their impact on academic learning and psychological well-being. Additionally, while trait resilience remained largely unaffected by immediate environmental factors such as HP and OBS, Chapter 4 recognises the dynamic nature of resilience, suggesting that temporary changes in state resilience may influence enduring trait resilience over time (Child & Medvedev, 2023; Kuldass & Foody, 2021; Miller et al., 2021).

Deliverables of Research Findings

Big Data Approach in Parenting Research

Reddit emerges as a promising avenue to explore hidden perspectives on parenting. Unlike traditional empirical methods used in parenting research, Reddit offers candid, qualitative insights, overcoming biases like social desirability. Its public accessibility enables comprehensive topic modeling, distinguishing it from platforms like Facebook and Instagram. Furthermore, leveraging text mining and NLP techniques enables researchers to extract valuable insights from large volumes of textual data, providing real-time understanding of users' psychosocial characteristics and facilitating a deeper understanding of human behavior and interaction (Marengo et al., 2019). This thesis represents a pioneering effort in recognising Reddit's potential as a rich and innovative data source for advancing theoretical frameworks in parenting research (Keerthigha et al., 2023).

Measuring CHPS in Singapore

The CHPS is a 10-item self-report questionnaire designed to measure the levels of involvement by helicopter parents in children's lives (Schiffrin et al., 2019b). While recent studies have showcased its excellent reliability across different cultural contexts (Hwang et al., 2024; Miller et al., 2024), it predominantly finds use in Western research. This prevailing trend hampers a holistic understanding of parenting dynamics across diverse cultural landscapes (Cheung & Lim, 2022). This research gap inhibits a comprehensive understanding of parenting dynamics in diverse cultural settings. This thesis addresses this gap by deepening our comprehension of the CHPS within the unique cultural context of Singapore, which encompasses various sub-cultures (e.g., Chinese, Malay, Indian; Li et al., 2021). Moreover, the CHPS has consistently demonstrated excellent reliability, with Cronbach's alpha ranging from .86 to .9.

In-Depth Investigation of the Role of Parenting in Fostering a Prosocial Society

Despite extensive research on HP and its negative outcomes, its impact on positive, prosocial behaviors remains understudied (Padilla-Walker, 2014). Existing literature suggests an indirect link between HP and prosocial behaviours (McGinley, 2018; Moilanen & Manuel, 2019; Nelson et al., 2019; Schiffrin et al., 2021). However, conflicting findings and limited research stresses the need to understand parents' contribution to youth prosociality. This thesis offers insights from parenting research on fostering a prosocial society, outlining HP as potentially detrimental to prosocial behaviors. Understanding this dynamic is crucial not only for individual development but also for its broader societal impact. Prosocial behaviours are essential for promoting interpersonal relationships and social functioning (Baumsteiger & Siegel, 2019; Carroll et al., 2007). Therefore, recognising the implications of HP on prosocial behaviour can inform strategies to promote a more prosocial society.

Empirically Testing the Intervention Strategy

This thesis offers comprehensive closure by providing empirical evidence on the effectiveness of OBS in building resilience. The findings underscore the potential of outdoor education in promoting character development (Gassner & Russell, 2008; Martin & Ho, 2009), recommending increased integration of such programs into formal curricula to better prepare students for real-world challenges. Systematic evaluation of OBS is crucial to assess intervention effectiveness. However, only Ang et al. (2014) have examined OBS outcomes, primarily focusing on school engagement. Further, no experiential learning-based intervention for resilience has been assessed in the manner undertaken, highlighting the importance of evidence-based interventions in educational settings.

Theoretical and Practical Significance of Thesis

Theoretical Implications

Expanding the Application of Social Cognition Literature. Social judgment, a universal and crucial process for surviving and thriving in the social world, prioritises behaviours that impact others more than the self. By examining the impact of HP on both positive and negative other-profitable behaviour, this thesis illuminates the pivotal role of parenting in shaping individual actions that carry implications for both the self and the society. Understanding parenting within this framework underscores the role of parents in socialisation. This thesis undertakes an innovative approach by integrating the principles of social cognition into parenting research, elucidating the implications of HP within interpersonal contexts.

Incorporating Insights from Organisational Psychology Literature. Evaluating an educational intervention provides valuable insights into designing successful interventions. This thesis evaluates OBS and its role in resilience-building. As discussed, the effect was short-lived. Explanation for this short term effect could be understood by drawing insights from organisational psychology literature. The lack of organisational support for trainees often results in negative training transfer, affecting the long-term retention of training material (Hughes, 2016; Moss, 2021). Perhaps, the short duration and integration of OBS within the curriculum may have overwhelmed trainees, affecting their long-term learning. Thus, future interventions should systematically integrate training programs into educational curricula instead of relying on ad-hoc efforts to prolong the long-term effectiveness of OBS. Additionally, active learning principles like boosting retention with post-training practice are crucial in promoting effective training (Latham & Saari, 1979), indicating the need for booster programs in education settings to extend the positive effects of OBS. Incorporating these insights from organisational literature can enhance the sustainability and efficacy of

interventions like OBS, contributing to positive long-term educational outcomes. Importantly, studies such as these offer independent, foolproof recommendations for integrating OBS into existing curriculum, empowering OBS to conduct more successful interventions in the future.

Practical Implications

Public Awareness of HP in Singapore. This thesis fills a significant research gap in the understanding of HP and its impact on youths in Singapore. Despite efforts by ministerial bodies to discourage HP practices in Singapore, there remains a notable absence of empirical evidence on its effects. By providing local-based evidence, this research sheds light on the consequences of HP in the Singaporean context, highlighting the importance of granting developmentally appropriate levels of autonomy to children. These findings not only serve to inform parents about the drawbacks of HP but also aim to foster discussions and awareness regarding effective and balanced parenting practices in Singapore (Cheung & Lim, 2022).

Role of Mother in Child Development. This thesis underscores the pivotal role of mothers in parenting and development, irrespective of each Chapter's methodology. Chapter 2 emphasises that research consistently demonstrates individuals predominantly cite their mothers when discussing parental figures. Chapters 3 and 4 further support this assertion, revealing that maternal models of parenting hold significant prevalence across diverse demographics, regardless of age differences. This aligns with the notion that maternal and child health constitutes the foundation of thriving families and societies in Singapore (Yap et al., 2022). While studies in Singapore focus predominantly on child-related outcomes (e.g., S-PRESTO and GUSTO; Loo et al., 2021; Soh et al., 2014), this thesis extends beyond childhood into youth development and consistently reaffirms the prominence of mothers in predicting individual and social well-being. This highlights the enduring importance of maternal influence at different developmental stages, emphasising ongoing efforts to support mothers in promoting positive developmental outcomes.

Challenges and Future Research Directions

Moving Beyond Single-Perspective Research

The complexity of family systems may not be fully captured through self-reporting of youths (Carlson & Meyer, 2014). To gain deeper insights, both child and parent perceptions of HP should be considered. However, relying solely on their self-reports may involve potential distortion through social desirability bias and retrospective recall. Retrospective reports are not accurate representations of the past as they are subject to influences from efforts to assign meaning and the cognitive processes involved in memory selection and interpretation (Chess et al., 1966; Schaefer et al., 2011). Therefore, future research should utilise dyadic data and incorporate prospective methods. Building upon the findings reported in this thesis, longitudinal studies tracking the perceptions of youths and parents over the school-to-work transition would offer valuable insights into the complexities of family systems and youth development within the context of HP.

Perceived vs. Received Functionality of HP

Although parents and youths may not perceive HP as extreme or invasive (Hwang et al., 2023), the reality of operating within the environment can reveal complexities and challenges that may not align with these initial perceptions. For example, while the perception of HP emphasises personal and professional advancement, the actual experience could entail sacrifices in other life domains, such as relationships, mental health, and overall quality of life. This discrepancy between perceived and received functionality of HP begs further attention. With recent research suggesting multiple profiles of HP, varying between mothers and fathers, lead to different qualities of parent–child relationships (Hwang et al., 2022c; Padilla-Walker et al., 2021), future research should explore how different profiles of HP affect perceived and received functionality, and adjustment outcomes across multiple domains of life.

Overall Conclusion

In summary, this thesis offers a comprehensive understanding of the impact of HP on youths, particularly within the Singaporean context. By employing a multi-method approach to explore personal experiences, individual and societal implications, and intervention strategies, the thesis highlights the detrimental effects of HP on youths' individual and social well-being. Its findings contribute to the broader literature on parenting styles and youth development, emphasising the importance of cultural specificity in understanding HP. Moreover, the thesis provides actionable recommendations for improving parenting practices and implementing educational interventions aimed at fostering positive outcomes in youth. Despite limitations, this thesis underscores the necessity of examining parenting outcomes both in terms of individual and social well-being, while advocating for the use of different methodologies to fully grasp its complexities.

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Appendix A

Ethics Approval for Chapter 2 (Ref: H8491)

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Appendix B

Big Data Ethics Guidelines

Recommended Ethical Code of Conduct (Landers et al., 2016; Krotov & Silva, 2018)	Explanation of Compliance in Present Study
Web scraping must not be performed on websites that require registration (free or not) to view content.	Reddit is a free-to-access website, requiring no registration to view its content.
If access to data is restricted via technological means, researchers should not attempt to circumvent these technological restrictions and instead seek express consent from the website owner.	The website has no restrictions on data.
The approach of web scraping should be theory-driven rather than data-driven in the context of social science.	Research questions were formulated.
Ensure web scraping is not explicitly prohibited by the website's "terms of use" policy.	Web scraping is not explicitly or implicitly prohibited by the website's "terms of use".
Ensure the website's data is not explicitly copyrighted.	The threads were user-generated and not from any copyrighted sources.
Ensure the research project does not encompass illegal or fraudulent use of the data.	The data was not illegally or fraudulently used.
Ensure web scraping does not possess the threat of causing material damage to the website or web server hosting the website.	<i>Pause codes</i> were input to prevent overwhelming the server. Pause codes restrict the speed at which the data is extracted. It pings the server once in 2 seconds, which is considered a safe ping frequency that will not overwhelm server capacity (Larson, 2008).
Ensure data collected from the website does not compromise individuals' privacy.	Users do not explicitly provide consent for their data to be mined. Thus, extra caution was taken when collecting and analysing their data to ensure they remain anonymous and unidentifiable.
Ensure data collected from the website does not reveal confidential information.	Data was not confidential.
Ensure research requiring the data does not possess the threat of reducing the value of the service provided by the website.	The data is publicly available, with or without the proposed data extraction.

Appendix C

Consolidated Helicopter Parenting Scale

Instructions: Please answer the following questions thinking about your *<insert parental figure 1 or 2>*.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree

1. My *<insert parental figure>* supervised my every move growing up.
2. Growing up, I sometimes felt like I was my *<insert parental figure>*'s project.
3. I feel like my *<insert parental figure>* sometimes smothers me with his/her attention.
4. My *<insert parental figure>* overreacts when I encounter a negative experience.
5. I think my *<insert parental figure>* is too overly involved in my life.
6. My *<insert parental figure>* has interfered in my life when I wish he/she wouldn't have.
7. I sometimes wish my *<insert parental figure>* would "back off" and stay out of my business.
8. I sometimes felt that my *<insert parental figure>* didn't feel I could make my own decisions.
9. My *<insert parental figure>* discourages me from making decisions that he/she disagrees with.
10. My *<insert parental figure>* is too controlling of me and my life.

Appendix D

Egocentric Selfishness Scale

Instructions: We can't always be charitable to others, and there are times when you have to look after your own self-interests. Please answer the following questions as honestly as you can, on a scale from 0 (*disagree*) to 2 (*agree*).

1	2	3
Disagree	Neither Agree nor Disagree	Agree

1. I'm not too concerned about what is best for society in general.
2. I don't give to charities.
3. When it comes to helping myself or helping others, I tend to help myself.
4. Quite often in life, it is more important to receive than to give.
5. It's better to save for a rainy day than to give to charities where money can be misspent.
6. I care for myself much more than I care for others.
7. Even when I see people in need, I don't feel the urge to help them.
8. At the end of the day, I have to admit that I'm quite a selfish person.

Appendix E

Prosocial Behavioural Intentions Scale

Instructions: Imagine that you encounter the following opportunities to help others. Please indicate how willing you would be to perform each behaviour, on a scale from 1 (*definitely would not do this*) to 7 (*definitely would do this*).

1	2	3	4	5	6	7
Definitely Would not do this						Definitely Would do this

1. Comfort someone I know after they experience a hardship.
2. Help a stranger find something they lost, like their key or a pet.
3. Help care for a sick friend or relative.
4. Assist a stranger with a small task (e.g., help carry groceries, watch their things while they use the restroom).

Appendix F

Relatedness Sub-Scale of the Depressive Experiences Questionnaire

Instructions: Listed below are statements concerning personal characteristics and traits. Please read each statement carefully and then decide the extent to which you agree or disagree on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*).

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree

1. The lack of permanence in human relationships doesn't bother me.
2. I would feel like I'd be losing an important part of myself if I lost a very close friend.
3. I constantly try, and very often go out of my way, to please or help people I am close to.
4. I find it very difficult to say "No" to the requests of friends.
5. I worry a lot about offending or hurting someone who is close to me.
6. If someone I cared about became angry with me, I would feel threatened that he/she might leave me.
7. After an argument, I feel very lonely.
8. Being alone doesn't bother me at all.

Appendix G

Ethics Approval for Chapter 3 (Ref: H8157)

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Appendix H

State-Trait Assessment of Resilience Scale

1	2	3	4
Disagree	Somewhat Agree	Agree	Strongly Agree

(A) Instructions: Please respond to the following in terms of how you feel right now. Please note that taking part in this study is voluntary and you may stop taking part in it at any time without explanation or prejudice.

1. At the moment, I can cope with any difficulties I might face in my life.
2. Currently, I believe I could recover from most life stressors.
3. At the moment, I believe I am very resilient.
4. Recently, I have felt like I would not be able to cope with any hardships that come my way.
5. Right now, I feel emotionally strong.
6. At the moment, I feel that life's ups and downs are too much to deal with.

(B) Instructions: Please respond to the following in terms of how you feel in general. Please note that taking part in this study is voluntary and you may stop taking part in it at any time without explanation or prejudice.

1. In general, I believe I am a resilient person.
2. Generally, when others may give up, I stand strong and keep fighting.
3. I don't believe I have the emotional strength to cope with life stress.
4. In general, I feel that things are too hard, and I can't manage.
5. In general, I do not feel I am an emotionally strong person.
6. I've always managed to stay strong when I have faced various hardships in my life.
7. I generally bounce back following stressful situations.

Appendix I

Basic Psychological Needs Scale

Instructions: Please read each of the following statements carefully. Think about how it relates to your life and indicate how true it is for you by ticking across the number corresponding to your answer.

1	2	3	4	5	6	7
Not at all True			Somewhat True			Very True

1. I feel like I am free to decide for myself how to live my life.
2. I really like the people I interact with.
3. Often, I do not feel very competent.
4. I feel pressured in my life.
5. People I know tell me I am good at what I do.
6. I get along with people I come into contact with.
7. I pretty much keep to myself and don't have a lot of social contacts.
8. I generally feel free to express my ideas and opinions.
9. I consider the people I regularly interact with to be my friends.
10. I have been able to learn interesting new skills recently.
11. In my daily life, I frequently have to do what I am told.
12. People in my life care about me.
13. Most days I feel a sense of accomplishment from what I do.
14. People I interact with on a daily basis tend to take my feelings into consideration.
15. In my life I do not get much of a chance to show how capable I am.
16. There are not many people that I am close to.
17. I feel like I can pretty much be myself in my daily situations.
18. The people I interact with regularly do not seem to like me much.
19. I often do not feel very capable.
20. There is not much opportunity for me to decide for myself how to do things in my daily life.
21. People are generally pretty friendly towards me.

Appendix J

Ethics Approval for Chapter 4 (Ref: H9086)

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