8-2016

# Conceptualization, Measurement, and Effects of Helicopter Parenting on College Students from the Millennial Generation

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# CONCEPTUALIZATION, MEASUREMENT, AND EFFECTS OF HELICOPTER PARENTING ON COLLEGE STUDENTS FROM THE MILLENNIAL GENERATION

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Western Michigan University, 2016

The social phenomenon of *helicopter parenting* (HP) has been rapidly growing. Although HP is generally characterized as overly involved parents who "hover" over their college student children (Cline & Fay, 1990), and some research efforts have been made in recent years on understanding the construct of HP, an essential weakness of the majority of these studies is the inadequate conceptualization of HP, both theoretically and operationally. The aim of the current study was to develop a new scale to measure the construct of *helicopter parent controlling* (HPC), and three questions were used to guide this study: (1) What are the underlying dimensions of the construct of HPC? (2) What is the relationship between HPC practices and college students' perceived stress? (3) How do the effects of HPC practices on college students' perceived stress differ when accounting for parental acceptance/warmth (AW)?

The study was cross-sectional survey research and the survey data were collected through self-reported online questionnaires. The two samples included 755 and 551 college students respectively from the *Millennial* generation ($18 \leq 33$ years) who were enrolled in fall 2015. The convenient sampling approach was used in which all the data were collected at a large, public institution in the Midwest region of the United States. The instruments included the following: Helicopter Parenting Scale, Helicopter Parenting and Autonomy Supportive Behaviors, Helicopter Parenting Instrument, Overparenting, Helicopter Parent Controlling Scale, Child

Report of Parent Behavior Inventory, and Perceived Stress Scale.

Using Mplus (7.4, Muthén & Muthén, 1998-2015), findings from both exploratory and confirmatory factor analyses revealed the multidimensional nature of the HPC construct. Although the three-factor model had no cross loadings in the exploratory factor analyses, both three-factor and four-factor solutions had good model fitting and reliability, and both were interpretable. Using the three-factor solution, the HPC construct consisted of three dimensions: Precautionary Actions, Problem Solving, and Physical Concerns; while using the four-factor solution, the additional dimension was Whereabouts Concerns. Consistent with the HP literature, findings from the structural equation modeling analyses in Sample Two revealed positive, predictive relationships between Precautionary Actions and Stress, and between Problem Solving and Stress. When the factor of AW was added to the tested models, Precautionary Actions no longer predicted Stress, and Problem Solving became a stronger predictor of Stress. Further, AW served as a moderator on the link between Problem Solving and Stress.

The multidimensionality of the HPC construct indicated that helicopter parents not only "hovered" over their college-going children when issues or problems occurred, but these parents also intervened in their children's lives in a broad way. To many Millennial college students, their parents' controlling behaviors were not welcomed, and were perceived as intrusive. Despite helicopter parents' controlling, their AW continued to play a vital role during the child's college experience. For caring and supportive helicopter parents, college students no longer perceived parents' solving problems on their behalf as negative. Limitations of the study, recommendations for future research, and implications for counseling and counselor education were also discussed.

# CONCEPTUALIZATION, MEASUREMENT, AND EFFECTS OF HELICOPTER PARENTING ON COLLEGE STUDENTS FROM THE MILLENNIAL GENERATION

by

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A dissertation submitted to the Graduate College
in partial fulfillment of the requirements
for the degree of Doctor of Philosophy
Counselor Education and Counseling Psychology
Western Michigan University
August 2016

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ACKNOWLEDGMENTS

First and foremost, I would like to express my sincere gratitude to my wonderful committee. I am thankful to Dr. Craig, my chair and advisor, for his guidance and encouragement during my doctoral studies. His positive regard and Adlerian style have greatly motivated me in my counselor educator professional development. Besides my advisor, I would like to thank my committee members, Dr. Di Pierro, Dr. Applegate, and Dr. Anderson, for their support, insightful comments and encouragement. My special gratitude goes to Dr. Di Pierro and Dr. Applegate. I am so grateful for having worked with Dr. Di Pierro closely in the past four years. Without her guidance, insights, motivation, and mentorship, I can't imagine finishing my PhD degree in good time. Dr. Applegate's expertise in methodology contributed greatly to my dissertation. I am indebted to him for his wisdom and suggestions in carrying out the project. I would also like to thank Dr. Joseph Morris for his support and mentorship throughout my doctoral studies. I would be remiss not to thank Western Michigan University for the fellowship and scholarship I have received to complete my dissertation project.

Last but not least, I thank my family, particularly my husband Dr. Hind for his endless support, love and for always standing by me.

BaoChun Z. Hind

TABLE OF CONTENTS

Table of Contents—Continued

Table of Contents—Continued

CHAPTER

Table of Contents—Continued

CHAPTER

Table of Contents—Continued

LIST OF TABLES

List of Tables—Continued

LIST OF FIGURES

# CHAPTER I

# INTRODUCTION

According to generational theory (Howe & Strauss, 1991; 2000), people in a particular age group tend to share a distinct set of beliefs, attitudes, values, and behaviors. The generational cohort of "Millennials", refers to adolescents and young adults who were born between 1982 and 2002, and is the largest, most educated and most culturally diverse generation in U.S. history (Pew Research Center, 2014; The Council of Economic Advisers, 2014). As Millennials grow up and go to college, concerns regarding challenges to their evolving autonomy due to their parents' continued involvement during these formative, transitional years from adolescence to young adulthood have increased in recent years. For example, there is a growing concern among university administrators and educators about the ways in which Millennials are parented, and the ways in which these parenting behaviors may negatively impact them, as well as the educational environment in which they dwell.

## Statement of the Problem

One growing phenomenon is the tendency for some parents of Millennials not to recognize or accept the limitations of their parental involvement with their college-going children. They have been reported contacting presidents of universities, deans, and professors, disputing their child's grade; requesting an extension for their child; requesting notification of grades their child received; and even attending job fairs and interviews with their child (Vinson, 2013). These parenting behaviors are coined "*helicopter parenting* (HP)" and characterize overly involved parents who "hover" over their college student children, serving as intercessors and resolving any problems or difficulties these children may encounter (Cline & Fay, 1990). Other

names have also been used to identify the same type of parents, such as "*hovercrafts*," "*hummingbirds*," and the even more extreme "*stealth fighters*" and "*black hawks*" (LeMoyne & Buchanan, 2011, p. 400).

Reported by major television networks, news magazines, and papers such as *CNN, NPR, Time Magazine, The New York Times, US News,* among others, the colloquial term of HP has become popular, and has drawn nationwide attention. Without substantial empirical research on the construct of HP, its negative connotation has nevertheless been spread throughout the media such as in the article "*Helicopter Parents are Damaging America's Future"* (Read, 2013), and the book "*A Nation of Wimps: The High Cost of Invasive Parenting***"** (Marano, 2008). Despite the notoriety of the topic, its presence in the media and the concern of those in higher education, there is a paucity of research surrounding this phenomenon. Therefore, research inquiries on empirically understanding this construct are necessary. Colleges and universities need to understand the mechanisms for contending with the presence of helicopter parents within the campus environment, as well as the manner in which interactions are managed. Laws governing privacy and student confidentiality figure prominently among these concerns, and there are clear limitations regarding the type and kind of information that a university or college is permitted to share with parents. It is imperative that more research is conducted towards HP and its impact upon the Millennial generation, and from multifaceted perspectives.

One such perspective that contributes to the necessity of understanding the phenomenon of HP concerns Millennials' decreasing sense of well-being and increasing mental health issues. Three large, national surveys reported by the Higher Education Research Institute (Cooperative Institutional Research Program Freshman Survey, 2009-2013), the American College Health Association (National College Health Assessment, 2011-2014), and the American College

Counseling Association (National Survey of College Counseling, 2012) all revealed that Millennial college students suffered higher levels of stress than prior generations, and their anxiety and depression issues were significant factors that impacted Millennials' academic performance. Further, various helping professionals have suggested that many Millennials are deficient in both frustration tolerance and the ability to cope with stress and conflict (e.g., Donatone, 2013; Levine, 2006), which echoes well with the evidence from those national data. Because of the major agent role of parents in the socialization of children (Maccoby, 1992), and the broad consensus about the effects of parenting practices on children's social, emotional, and psychological development from birth to young adulthood (Maccoby & Martin, 1983), one may wonder whether the ways in which Millennials are raised, and particularly the extent of the HP practices are associated with their psychological functioning.

**Change in traditional relationship between parents and college-going children.** The traditional view of the relationship between parents and college-going children has shifted in recent years. A once-held view of parenting reflected the idea that once a child turns 18, he or she is an independent adult who no longer requires parenting. The reality, however, is that the new generation of Millennials maintains a close relationship with their parents during and even after college, as evidenced by constant contacts between them and their parents (College Parents of America, 2006), and increasing co-residence with their parents (US Census Bureau, 2014). In addition, the notion of *emerging adulthood*, a recently developed term to describe the delayed adulthood, the transitional period between adolescence and young adulthood when individuals are approximately 18 to 24 years of age (Arnett, 2000; 2004; 2012), further suggests that the Millennials are an exception to the traditional view. As Arnett (2012) argued, referring to the age period 18-24 as "young adulthood" did not make sense because what occurs today in the 18-24-

age period is in many ways unprecedented, and few have entered marriage, parenthood, and a stable occupational path, all events associated with adult status. Hence, the relationship with parents and the need to be parented may matter to college-going Millennials.

**Research gaps on helicopter parenting**. Some research efforts have been made in recent years on understanding the construct of HP, and most researchers view HP as an untoward manifestation with significant negative outcomes (e.g., Bradley-Geist & Olson-Buchanan, 2013; LeMoyne & Buchanan, 2011; Schiffrin, et al., 2013; Segrin, Woszidlo, Givertz, Bauer, & Murphy, 2012). However, an essential weakness of the majority of these studies is the inadequate conceptualization of HP, both theoretically and operationally, including the following: (a) disconnection from parenting research tradition, (b) unclear dimensionality of helicopter parent controlling (HPC) practices, (c) unclear distinctions between HPC and three established parental control constructs, and (d) unclear relationship between HPC and parental acceptance/warmth (AW). These inadequacies of HP conceptualization in the parenting research context may lead to a negative bias in understanding HP and its relevant outcomes. Therefore, a research effort targeting these inadequacies could be an important contribution. Further, an accurate conceptualization of the construct may ground HP into the parenting literature to make it distinguishable and meaningful.

***Disconnection from parenting research tradition.*** Research on the conceptualization of the HP construct indicates its disconnection from the parenting research tradition. In parenting literature, one dominant approach to understanding parenting is the dimensional approach; two essential parenting dimensions have been broadly studied and identified: control and acceptance/warmth (AW). Implementing this to the HP research, however, the extent to which the construct of HP connects with the two classical dimensions is not clear. Although most

researchers thus far agree that HP practices are a form of control, the association between the new construct of HP and the classical control dimension, which is most defined during a child's childhood and adolescence, is unknown. It is possible that parenting features during a child's emerging adulthood are different from her or his childhood and adolescence.

***Unclear dimensionality of HPC practices***. The key to understand the construct of HP is its dimensionality. However, the up-to-date HP research does not give a clear answer. While some researchers (e.g., Padilla-Walker & Nelson, 2012; Schiffrin, et al., 2014; Segrin, et al., 2012) drew the conclusion that the HPC practices were unidimensional, the features of their defined dimensions were different, such as decision-making/problem solving (Padilla-Walker & Nelson) and monitoring practices (Schiffrin, et al.). Analyzing these individual research efforts together may indicate a possible multidimensionality on the HPC practices.

***Unclear distinctions between HPC and three established parental control constructs*.** Using the dimensional approach to understand parenting has a long history in the parenting literature, and the emergence of three parental control constructs (i.e., behavioral control, psychological control, and autonomy development) during adolescence can date back to the 1960s (e.g., Schaefer, 1965). The distinctions among them have also been widely researched. However, when comparing them with the HPC construct, research is limited and the distinctions between HPC and well established parental control constructs are not clear.

***Unclear relationship between HP and parental AW*.** Because parental AW has been identified as one fundamental component of parenting (Barber, Stolz, & Olsen, 2005; Maccoby & Martin, 1983), it is crucial to understand the relationship between HPC practices and AW. That is, by understanding the extent to which a Millennial child perceives her or his helicopter parent as affective, nurturing or supportive, the types of HP could be discriminated across a

spectrum. To date, research findings exploring the relationship between HPC practices and AW are mixed (e.g., Nelson, Padilla-Walker & Nielson, 2015; Padilla-Walker & Nelson, 2012). More scientific evidence is strongly needed to understand their relationship.

**Purpose of the Study**

The purpose of the dissertation study was to understand a new generation of college students by empirically conceptualizing the construct of HP, and by documenting the importance of HP on college students' psychological functioning through testing some predictive, and moderating effects. In order to conceptualize the construct of HP, the underlying dimensional structure of helicopter parent controlling (HPC) was first assessed. In addition, in an effort to understand the mental health concerns of Millennials, the association between HPC and college students' perceived stress was examined. Moreover, examinations of moderating effects in the relationship between HPC and stress provided a better understanding of "when" HPC might or might not be predictive in the relationship with students' perceived stress.

**Significance of the Study**

Academically, the findings from the study contribute to the literature of parenting and child development, as well as college education. The innovative study focused on understanding the new social phenomenon of HP, and intended to gain a better understanding of parenting practices after adolescence – a new research trend that reacts to the recent *emerging adulthood* developmental theory (Arnett, 2000), and the Millennials' generational features. The study findings helped to classify the HPC practices and documented the effects of the HP practices on college students' psychological functioning.

Practically, the study results may provide important information for higher education institutions and helping professionals to better understand today's college students and the new

generation of Millennials. Working with Millennial students, college and university administrators and educators may find themselves confronted by a generation of young individuals who do not necessarily reflect the educational patterns and behaviors of previous generations. In an effort to sustain the initiatives of higher education, it is important to be aware of and understand the generational characteristics of Millennials in order to discover innovative pedagogies and curricular changes that will aid in students' initiation into the college environment. It is also important for colleges and universities to understand the new features of the relational dynamics between Millennials and their parents, and the various needs of both parties.

Similarly to colleges and universities, counselor educators may find themselves challenged when working with the next generation of counselors in training. It is crucial for them to be aware of the generational features of the Millennial students, the nature of the HP phenomenon, and the manner in which the new cultural shifts influence them. Such awareness and understanding is important to contend with changing characteristics of the next generation of counselors in training themselves, and to prepare counselors to work with diverse populations. Further, the research findings may provide counselor educators with important information that could better assist them in training future counselors in working with Millennials and their parents, and in better explicating the overall phenomenon of HP.

For counselors and other helping professionals, understanding the complexity of the HP phenomenon and the relationship between HP and Millennials' psychological functioning is very important, especially due to the recent report of increasing number of students with severe psychological problems on college and university campuses (Gallagher, 2012). Counselors and helping professionals need to understand the extent to which HPC and other parenting practices

impact Millennial students, and be aware of the multifaceted features of HP. In addition, information regarding the generational features of Millennials, and the dynamic change of the relationship between parents and Millennials, are also important for clinicians with rapport building, assessment and treatment planning when working with Millennials and college students.

**Research Questions and Hypotheses**

This study was guided by three research questions: (1) What are the underlying dimensions of the construct of helicopter parent controlling (HPC)? (2) What is the relationship between HPC practices and college students' perceived stress? (3) How do the effects of HPC practices on college students' perceived stress differ when accounting for parental acceptance/warmth (AW)?

Building on current HP research and the parenting research tradition, it was hypothesized that (1) the new construct of HPC might be multidimensional, and the HPC practices might include multifaceted features; (2) a predictive relationship might exist between HPC practices and college students' perceived stress, and (3) parental AW might be a strong factor that moderates the relationship between the HPC practices and college students' perceived stress.

**Theoretical Framework of Understanding the Study Context**

This dissertation study is embedded in theories that frame social, family and individual development contexts wherein college-going Millennials develop, interact and socialize (see Figure 1). Understanding the study context and the relevant theories that lead to an explication of the context helps to comprehend the dynamics that shape today's college students, the helicopter parents, and the parent-child relationship. In particular, ecological system theory (Bronfenbrenner, 1979) and generational theory (Howe & Strauss, 1991; 2000) provide a social

and cultural background to understand Millennials who grew up in a specific period of time in U.S. history (Level 1). Such a specific context distinguishes Millennials and their relationship with parents from prior generations in the U.S. and peers worldwide. Consequently, the phenomenon of HP is a product of certain social and cultural contexts and emerges out of these social and cultural contexts. In addition, families, within the broad social and cultural context, directly and indirectly, shape the development of Millennials (Level 2). Viewed from the family perspective, the socialization theory explains the importance of the parental role of socializing Millennials to conform to those social roles regarded as desirable and appropriate, through parenting practices (Maccoby, 1992; Parke & Buriel, 2008). At the same time, attachment theory (Ainsworth, Blehar, Walters, & Wally, 1978; Bowlby, 1969) connects Millennials and their parents through bonding, and theorizes the importance of parental warmth and emotional support for Millennials even after they go to college. Moreover, developmentally, the psychological needs of college-going Millennials are different from those in other developmental stages (Level 3). Both self-determination (Deci & Ryan, 2008; Ryan & Deci, 2000) and development theories (Chickening, 1969; Chickening & Reisser, 1993) address an individual's need for autonomy during college time, which is a fundamentally developmental task for college students. The interrelationship among the three levels is that college-going Millennials' developmental context is embedded in family context, and they both are embedded in the broader social and cultural context.

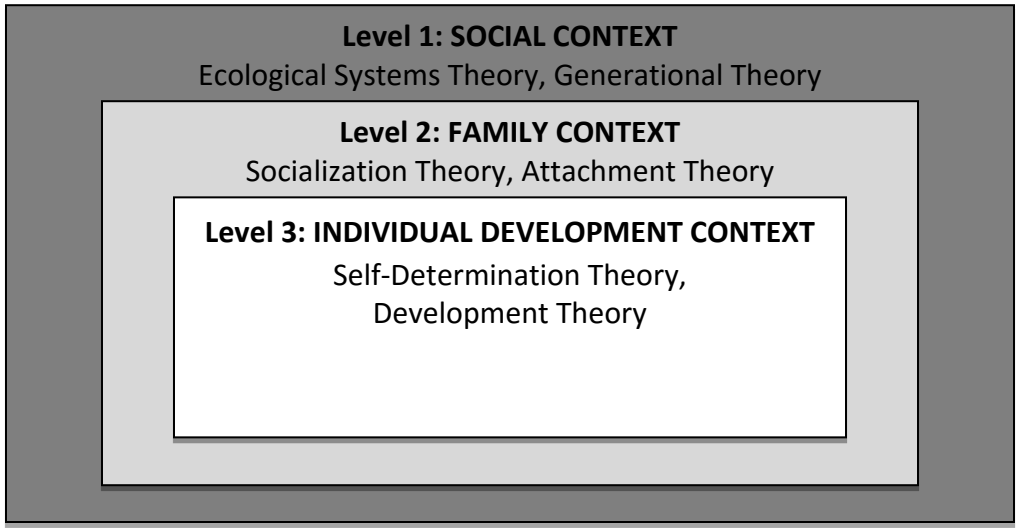


**Figure 1.** Theoretical Understanding of the Study Context

## Overview of Literature Review

The scope of the literature review in this study was determined by the purpose of the study and the research questions. The review starts from the contextual understanding of the college-going Millennials and the phenomenon of HP practices, both theories and data evidence that support the dynamic change of the relationships between parents and college-going Millennials, and between higher education institutions and college parents. The review then addresses the arising concerns about the phenomenon of HP and Millennial college students' well-being. Finally, the review uncovers the up-to-date empirical research on HP that includes the conceptualization and measurement issues of HP, the outcome studies regarding HP effects, the parental acceptance/warmth, and the relevant parenting research during adolescence and emerging adulthood.

## Overview of Research Methodology

Driven by the research questions of the study, a cross-sectional survey research approach (Gay & Airasian, 2003) was used in this quantitative study, and the survey data were collected through self-reported online questionnaires. The target population was the college-going Millennials (age range between 18 and 33 years) who were self-identified as college or university undergraduate students and who lived in the U.S. when the data were collected. The convenient sampling approach was used in which all the data were collected at a large, public higher education institution in the Midwest region of the U.S. Due to the objectives of developing and testing a new scale to measure the HPC practices, two samples ($N_1$ = 755 and $N_2$ = 551) were used in which both exploratory and confirmatory factor analyses were investigated.

The initial scale of HPC measure was developed using the current available four HP measurement scales from the published articles prior to scale testing in the two samples. The statistical program Mplus (Version 7.4, Muthén & Muthén, 1998-2015) was used and the robust weighted least squares estimator was the primary estimation method based upon the ordered categorical nature of the data. After the dimensionality of the new scale was factored and the data-model fit was estimated, the final HPC factor solution was used in testing models designed to answer the second and the third research questions. The structural equation modeling (SEM) analyses were performed and all SEM models used latent variables in their corresponding measurement and structure models.

## Study Delimitations

There are four study delimitations. First, the cross-sectional data nature decides non-causal relationships between independent variables and dependent variables. Second, the convenient sampling and the online survey approaches may limit the generalization of the study

results to the broad college student population. It is possible that the participants were mainly those who might either feel positively or negatively about HP. In addition, students' university email addresses were the only way through which the potential participants were recruited. It is likely that some college students do not check their university email accounts regularly and therefore were not aware of the study announcements. Finally, the model fit indices generated by the Mplus (7.4) were primarily used to determine the data-model fit in the factor and SEM analyses. It is important to note that adequate data-model fit does not imply a model representing "truth." Instead, the model is one possible representation of the structure underlying the observed variables.

**Organization of Chapters**

The study is presented in five chapters:

Chapter I introduces the topic and explains the statement of the problem, study purpose and research questions, significance of the study, theoretical framework, overviews of the literature review and research method, and study delimitations.

Chapter II is a literature review, presenting an overview of the relevant literature on college-going Millennials and up-to-date HP research.

Chapter III consists of an explanation of the methodology for the study.

Chapter IV includes findings from the study.

Chapter V includes overview of findings, discussions, limitations of the study and recommendations for future research, and implications.

**Glossary**

*Millennial* generation: defined by Howe and Strauss (2000). Millennial generation refers to children and young adults who were born between 1982 and 2002. Like other generations,

such as the *Baby Boom* generation (born 1943-1960), and *Generation X* (born 1961-1981), the Millennial generation shares some unique experiences that differ from prior generations.

Helicopter parent: broadly refers to overly involved parents who "hover" over their children, ready to swoop down and resolve any problems that the child might encounter (Cline & Fay, 1990).

Emerging adulthood: defined by Arnett (2000; 2004; 2012), emerging adulthood reflects the transition to adulthood that is a period after adolescence and before entry into adulthood. It refers to a time characterized by change and the exploration of potential life paths that occurs when individuals are approximately 18 to 24 years of age.

Parenting practice: refers to "specific goal-directed attempts" by the parent to socialize the child in a particular fashion, which is "more or less independent" from the parenting style (Steinberg, 2001, p. 121). Parenting practices can be carried out in very different ways or styles.

Parenting style: refers to "a constellation of attitudes toward the child that are communicated to the child and create an emotional climate in which the parent's behaviors are expressed (Darling and Steinberg, 1993, p. 493)

Parenting dimension: refers to a variable or factor of parental behavior that is concluded from the consistency of study findings across samples, methods, and analytic approaches (Barber et al., 2005; Power, 2013). Parenting dimensions account for parental influence in the socialization of children (Rollins & Thomas, 1979).

Parental control: refers to "the behavior of the parent toward the child with the intent of directing the behavior of the child in a manner desirable to the parents" (Rollins & Thomas, 1979, p. 321).

Parental behavioral control: defined as parenting that seeks "to regulate the child's behavior through rules, restrictions, and knowledge of a child's day-to-day behavior" (Barber, Olsen & Shagle, 1994, p. 1121).

Parental psychological control: refers to parental control that constrains, invalidates and manipulates children's psychological and emotional experience and expression (Barber, 1996; Barber, et al., 2005). In their review, Barber et al. (2012) further refined an understanding of this term by describing psychological control as manipulation, coercion, disrespect, and intrusion into the personal domain.

Parental autonomy support: refers to parental encouragement of Millennial students' individual expression and decision-making. Parents high in supporting autonomy allow Millennials to make choices about activities and behavior, and encourage the development of independence (Morris, et al., 2001; Silk, Morris, Kanaya, & Steinberg, 2003).

Autonomy: refers to the notion of self-governance. An autonomous person makes independent decisions and assumes responsibility for his or her own decisions (Steinberg, 2008).

Parental acceptance/warmth: refers to a parent's positive evaluation, sharing, expression of affection, emotional support, and equalitarian treatment (Schaefer, 1965). Other labels of acceptance/warmth are support (Barber et al., 2005; Bean, Barber, & Crane, 2006), and connection (Barber & Olsen, 1997; Barber, 1997).

Well-being: refers to a multifaceted construct that includes aspects of both *hedonic* and *eudaimonic* well-being (Procacci, 2008). Hedonic well-being, also termed subjective well-being, refers to the presence of positive affect, absence of negative affect, and a general sense of satisfaction with life (Diener & Lucas, 1999; Diener, Nickerson, Lucas, & Sandvik, 2002). Eudaimonic well-being, typically refers to psychological well-being, includes self-acceptance,

positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth (Ryff, 1989).

Moderation Analysis: used when the goal is to uncover the boundary conditions for an association between two variables. “An association between two variables *X* and *Y* is said to be moderated when its size or sign depends on a third variable or set of variables *M*.” Moderation is also known as *interaction* (Hayes, 2013, p. 8).

# CHAPTER II

# LITERATURE REVIEW

The goal of Chapter II is to place the study in the context of relevant existing literature about Millennial college students, and to shed light on the gaps in previous research on helicopter parenting (HP). Because the purpose of the current study is to empirically conceptualize the construct of helicopter parenting controlling (HPC), and to document the effects of HP on college students' psychological functioning, the review of literature is organized by the following major sections: (a) HP in contexts, (b) arising concerns about college-going Millennials, (c) empirical research on HP, and (d) chapter summary.

## Helicopter Parenting in Contexts

The social phenomenon of HP is a product of certain contexts. The major contexts in which HP is embedded include the broad social and cultural context in the U.S. since the 1980s when the Millennials were born, the family context of Millennials, and the individual development context for college-going Millennials. The section starts with the theoretical background that explicates the three levels of contexts, followed by the contextual factors relevant to Millennial college students and HP.

**Theoretical background of HP**. According to ecological system theory (Bronfenbrenner, 1979) and generational theory (Howe & Strauss, 1991; 2000), Millennials grew up in a specific social and cultural context that distinguishes them from prior generations. The ecological framework (i.e., *micro, meso, exto, macro,* and *chrono,* Bronfenbrenner, 1979) indicates that Millennials and their parents, as individuals, live within multilevel contexts that have shaped their attitudes, behaviors, and worldviews. Similarly, generational theory illustrates

those unique generational traits of Millennials which originated within certain social and cultural contexts during a period of time in history.

In addition to the social context that shapes parenting and family functioning (Steinberg & Silk, 2001), family is the most highly influential context for children's socialization, and parents are the major agents contributing to the socialization process (Maccoby, 1992; Parke & Buriel, 2008). *Socialization* refers to a process in which an individual's standards, skills, motives, attitudes, and behaviors change to conform to those regarded as desirable and appropriate for his or her present and future role in society (Parke & Buriel). Socialization theory indicates that parenting goals may be shaped by social norms to pursue desirable social roles for children. Also within the family context, attachment connects Millennials and their parents through bonding. First developed by Bowlby (1969), and then expanded by Ainsworth et al. (1978), attachment theory has been widely adopted in the parenting literature. From an attachment perspective, the attachment figures, and most likely the parents, serve the adaptive function of providing a secure base that promotes active exploration and mastery of the environment. For college students, if parents remain important as a secure base, these children would continue to seek their parents out in situations of stress, and would view them, still, as an available source of support when needed.

Moreover, developmentally, Millennial college students' psychological needs during the period of emerging adulthood are different from those in other developmental stages. Two theories, dominant in the literature of adolescent development and higher education, strongly support that autonomy is one of the most important psychological human needs and developmental tasks for traditional college students. Self-determination theory (SDT, Deci & Ryan, 2008; Ryan & Deci, 2000) posits that within any significant life domain, opportunities to

experience autonomy, which represents a basic psychological need, are essential in promoting life satisfaction and well-being; development theory (Chickening, 1969; Chickening & Reisser, 1993) postulates that moving through autonomy toward interdependence is one college student developmental vector, and the development of autonomy begins with separation from parents. Since helicopter parents' controlling practice discourages the autonomy development of their children, according to SDT, the phenomenon of HP may be associated with poor psychological functioning of Millennials (Schiffrin et al., 2014).

Guided by these theories, the contextual factors relevant to HP are reviewed as follows: (a) importance of post-secondary education to Millennials, (b) increasing cost of college, (c) the role of technology and increased parent/child communication, (d) delays in home leaving and marriage, and (e) importance of autonomy development during emerging adulthood and college. These contextual factors are important because they are relevant to the occurrence of the HP phenomenon.

**Importance of post-secondary education to Millennials.** Millennials and their parents live in a social context in which pursuing a college degree becomes mainstream, and in a cultural context that values achievement in the U.S. (Young et al., 2011). Specifically, with the 2008-2009 economic recession and increasingly complex workplace, lengthy education is perceived as ensuring a "good" start in the workforce with better economic prospects (Aronson, 2008; Young et al., 2011). Consequently, higher education in the 21st century in the U.S. is no longer for the elite but a necessity for individuals who want access to good jobs with decent wages and benefits (Settersten, 2011; Young et al., 2011). From 2000 to 2008, undergraduate enrollment in post-secondary institutions increased by 24% to 16.4 million students (U.S. Department of Education, 2010). According to the New Census Bureau Statistics (US Census Bureau, 2014), between 2009

and 2013, the percentage of individuals of 18-34 years with a bachelor's degree or higher was 22.3, whereas it was 15.7 in 1980. In fact, more than half of Millennials choose to go to college after high school. In October 2014, 68.4% of high school graduates were enrolled in colleges or universities, with an enrollment rate of 72.7% for young women and 64.0% for young men (U.S. Bureau of Labor, 2015).

Despite great advances in access to college, the college attrition rate remains high. Large national data indicate for the 2007 cohort, 40% of students who first enrolled at ages younger than 20 did not graduate after six years. Approximately 16% of them were still enrolled, and 24% not enrolled. (Shapiro, Dundar, Ziskin, Yuan, & Harrell, 2013). Therefore, the pressure of educational achievement and degree completion may become reasons for Millennial parents to get involved in their children's college experiences.

**Increasing cost of college.** Another reason that Millennial parents may prefer more involvement in their children's higher education may be due to the increasing cost of college (Wartman & Savage, 2008). Kennedy (2009) calculated that between 1995 and 2004, the cost of attending a public university increased 71.3%, and the cost of attending a private university increased 98.1%. Accordingly, parental support and family resources become important elements that are critical for Millennials to finish higher education. Parents may anticipate greater levels of return for their investment in their children's future. In fact, parents' financial involvement is prevalent for Millennials. For instance, in a large national survey of 14,460 first-year college students in 2012, over 90% of non-first-generation students and 80% of first-generation students reported using family resources to finance their college education (Eagan, Lozano, Hurtado, & Case, 2013). In addition, parents whose positions have been downsized or eliminated may find themselves in competition for family resources to retrain, and thus, inadvertently, are competing

against their own offspring for scarce finances: Sacrifices on their part to set aside their own goals in favor of supporting their children's educational needs may also result in the tendency to overly invest in parenting. On the other hand, it should be noted that not all youth are fortunate enough to have parental support and assistance to attain education. Youth from lower social classes may not have the parental provisions of assistance that enable the completion of post-secondary education (Young et al., 2011).

**The role of technology and increased parent-child communication.** The trend of heightened parent-child communication and accessibility is highly related to the rising use of technology. Cellular phones, Internet, e-mail, text messaging, and instant messaging are all part of the digital age in which the Millennials grew up and to which they are now accustomed. These technologies result in the fact that parents and children can remain closely connected to each other on an almost continual basis. A national survey by the College Parents of America (2006) found that among the 839 college parent participants, 74% of parents communicated with their college student children at least two to three times weekly, with 34%, or more than one in three, having such communication on at least a daily basis.

In another survey of nearly one thousand students and their parents at both the University of Michigan and Middlebury College in the fall of 2006 (Hofer & Moore, 2010), one author and her advisee found the average number of times that families communicated was 13.4 times per week, regardless of the student's academic designation in the four-year college system. All talked about the same amount of time, mostly on cell phones that were owned by 97% of students in the study, followed by e-mail communication. The follow-up study in 2008 (Hofer & Moore) indicated that contacts with parents averaged slightly less when compared with the 2006 study, at just over 10 times a week. There was no differentiation among participants based on

income, ethnicity, race, or distance from home. However, the gender of the child contributed to a notable difference in the frequency of communication. Daughters talked to their parents more than sons did: 14.5 times compared to 11.3 times per week. In addition, on average, both male and female students talked more with their mothers than with their fathers. Further, about 75% of the students surveyed appeared content with the degree of communication they experienced with their parents. Interestingly, those who reported being dissatisfied were likely to want more communication, not less. This outcome indicates that frequency of communication, whether in the form of phone calls or e-mail, figures importantly in the world of Millennials. Findings might also indicate that parent-child relationships remain strong during a child's college time, based on attachment theory (Ainsworth et al., 1978; Bowlby, 1969).

**Delays in leaving home and marriage.** One marker of adulthood in the U.S. is associated with household formation and family relationship (Young et al., 2011). Compared to 50 years ago, there are delays in leaving home, first marriage, and transition to parenthood (Fussell & Furstenberg, 2005). According to New Census Bureau Statistics, based on the American Community Survey (US Census Bureau, 2014), the percentage of the total population of individuals (18-34 years old) living with a parent who is the head of the household was 30.3 in between 2009 and 2013, whereas it was 22.9 in 1980. In terms of first marriage age, the median ages were 22.8 years for men, and 20.3 years for women in 1950; by 2013 the median marriage age increased by more than six years for both genders, reaching 29.0 and 26.6 for men and women respectively (The Council of Economic Advisers, 2014). The delays in home leaving and first marriage are associated with a delay of entering into adulthood for Millennials. Thus, the veracity of Arnett's (2000; 2004; 2012) point that individuals who were between 18 and 24, and were best defined as those that fell into the "emerging adult" category is quite clear. Indeed,

empirical research suggested that individuals were more likely to perceive themselves as adults if they established a household, a long-term relationship, and began parenting (Shanahan, Portfeli, Mortimer, & Erickson, 2005).

**Importance of autonomy development during emerging adulthood and college.** In addition to the contextual factors that are associated with the macro- and micro- contexts where Millennials live, developmentally and psychologically, Millennials during emerging adulthood are in need of autonomy, even though their need for bonding and attachment with parents is still important during this developmental stage. As self-determination theory suggests, the social contexts that support satisfaction of the basic need for autonomy facilitate intrinsically motivated behavior and integration of extrinsic motivations, whereas those that forestall autonomy are associated with poorer motivation, performance, and well-being (Deci & Ryan, 2008; Ryan & Deci, 2000). Autonomy is also one important development vector for college students (Chickening, 1969; Chickening & Reisser, 1993).

In addition to the theoretical paradigms, strong empirical evidence suggested that students' autonomy development was related to parenting practice and the parent-child relationship. Research findings indicated that autonomy-supportive parents, as reflected in the self-determination theory, had more autonomous children, who were in turn, better adjusted in school (Grolnick & Ryan, 1989), had greater motivation and achievement (Fulton & Turner, 2008; Ginsburg & Bronstein, 1993), and had more of a capacity for adaptive emotion regulation and intimacy (Roth & Assor, 2012). Therefore, it is safe to conclude that there are correlations between parents who are not supportive of children's autonomy need during emerging adulthood and college, and negative results in their parenting outcomes.

To summarize, this review section places the phenomenon of HP in various contexts, and analyses certain relevant contextual factors that may contribute to the development of HP. Among those factors, both "importance of post-secondary education" and "increasing cost of college" justify the involvement of Millennial parents in their children's college experiences. In addition, while "the role of technology and increased parent/child communication" demonstrates that parent-child bonding matters to college-going Millennials, "delays in leaving home and marriage" indicates that today's traditional college students are delaying to enter adulthood, and parenting practice during college may be necessary to Millennials. Moreover, "the importance of autonomy development during emerging adulthood and college" voices the critical need of autonomy for Millennials during college, regardless of their attachment need to parents.

**Arising Concerns about College-Going Millennials**

This section explores the arising concerns and issues about college-going Millennials documented in the literature. These primary concerns include the following: (a) concerns about HP from the college/university perspective, and (b) concerns about Millennials' psychological functioning.

**Concerns about HP from college/university perspective**. The term *helicopter parent* was birthed in 1969, the year of the publication of the book *Between Parent & Teenager* by Dr. Haim Ginott in which a teen complains, "Mother hovers over me like a helicopter…" Then in 1990, Cline and Fay further coined the term to describe the phenomenon of parents "hovering" around their children (Cline & Fay, 1990). However, it was not until in the early 2000s, when the Millennial generation began entering college, that HP quickly became part of the American educational vocabulary (Colavechio-Van Sickler, 2006). It is important to note that although the

term has been used in reference to children at all developmental stages, in most applications, it implies a college student population, the focus of the current study.

Today's Millennial parents appear more eager to get involved in their children's college experiences than prior generations. For example, in a 2006 national study of college student affairs professionals at 127 institutions, 93% indicated an increase in interaction with parents in the last five years (Merriman, 2007). In another study, 190 college academic and student affairs professionals estimated the percentage of helicopter parents on their campus as in between 40% and 60%, and these parents were both men and women from all racial, economic, and ethnic groups (Somers & Settle, 2010).

Since the 1960s, after the demise of *in loco parentis* (Latin for "in the place of the parent") doctrine, American colleges/universities have become facilitators of student development through the work of their student affairs offices, and students are supposed to take primary responsibility for their behaviors and actions (Lee, 2011). In addition, the Family Educational Rights and Privacy Act of 1974 (FERPA) generally limits what college/university administers are permitted to tell parents about their children's academic performance and social conduct (White, 2005). Therefore, helicopter parents' over involvement and intervention in their children's life may challenge today's colleges/universities. For example, helicopter parents are reported having direct contact with university officials and their children's future employers, such as calling the deans to complain about the low grades their children received, calling administrators to complain when their children could not get into classes they wanted, and haggling with job recruiters to make sure their children receive a good salary and work schedule (Colavechio-Van Sickler, 2006). Moreover, anecdotal evidence also shows that helicopter

parents may be involved in unethical activities such as writing their children's term papers (Colavechio-Van Sickler).

With the new challenges of helicopter parents, anecdotal accounts of HP and ways in which to deal with them have become common topics of concern among colleges/universities' educators and administrators (Vinson, 2013). They seem to understand that these parents mean well, but are concerned that their frequent participation and unreasonable demands may stunt student development and test the patience of university officials (Colavechio-Van Sickler, 2006). From the viewpoint of student development, some college/university officials indicated that they had observed a growing number of freshmen who lack basic skills, including negotiating for their own needs, getting along with others in a shared space, using common sense to stay safe, showing self-reliance in the face of adversity, and solving their own problems (Shellenbarger, 2005); from the viewpoint of legal obligations imposed on them by laws, college/university officials were concerned that increasingly active participation of helicopter parents in the everyday lives of their college-going children could potentially have legal implications (White, 2005).

The challenge that helicopter parents bring to American colleges/universities is new. Helicopter parents' interactions with colleges/universities' administrators and educators may illustrate their eagerness to get involved in their children's higher education. However, American higher education institutions do not encourage parents' involvement and intervention, due to the assumption that students are adults and their college activities are their own business, not their parents' (White, 2005).

**Concerns about Millennials' psychological functioning**. Compared to prior generations, the new generation of college-going Millennials appears to have a low level of

psychological functioning, as indicated by some national data and anecdotal evidence from clinicians. It is important to be aware of these concerns and to understand to what extent and under what mechanisms HP is associated with college students' well-being.

The National Survey of College Counseling (Gallagher, 2012) has been conducted since 1981 and includes data provided by the administrative heads of college/university counseling centers in the U.S. and Canada. In 2012, among the 293 counseling centers surveyed, 88% of center directors reported a continuing trend toward greater numbers of students with severe psychological problems. In addition, over the past five years, 48% of directors noticed the increasing use of illicit drugs, and 36% of them noticed the increasing abuse of alcohol on their campuses.

In another six large national survey series titled National College Health Assessment, conducted by American College Health Association (ACHA) from spring 2011 to spring 2014, 76,481 undergraduate students from 141 campuses reported several factors affecting their individual academic performance within the previous 12 months, and these factors included stress, anxiety, depression, alcohol use, and drug use (from the most reported to the least reported). Although the data included only 6 semesters, there may be an identifiable trend. It does seem that students' reported stress, anxiety and depression increased slightly across the six semesters, and these factors were related to academic performance and success. Failure to attain academic success was defined as follows: (1) received a lower grade on an exam, or an important project; (2) received a lower grade in the course; (3) received an incomplete or dropped the course; or (4) experienced a significant disruption in research or practicum work (ACHA, 2014, P. 5). In addition, over half of students reported experiencing overwhelming anxiety, and over

30% reported experiencing depression at any time, from within the last two weeks, 30 days, to 12 months from the time of responding to the survey (ACHA).

Among the college student population, college freshmen may experience additional adjustment issues as a result of the transition to college. According to the nearly 50 years' national data from the annual Cooperative Institutional Research Program Freshman Surveys (Higher Education Research Institute), American college freshmen reported decreased emotional health and increased stress between 2009 and 2013 than between 1985 and 1989. The data illustrated that the current generation of freshmen is about 10% less happy than the counterpart 30 years ago.

In addition to those large national datasets, anecdotal evidence reported by clinicians who had worked with Millennials also showed that this new generation might be challenged by conflict negotiation, and were often overwhelmed by achievement pressure from their helicopter parents (Donatone, 2013; Levine, 2006). As stated by Donatone, "The over-involvement of helicopter parents prevents children from learning how to grapple with disappointments on their own" (para. 8).

In sum, helicopter parents have challenged American colleges/universities in recent years. Faced with helicopter parents' over involvement and intervention, college/university officials are concerned about student development and legal obligations. In addition, concerns about Millennials' psychological development and functioning, either from the perspectives of college/university administrators and educators, or clinicians, are justified by strong national data.

**Empirical Research on Helicopter Parenting**

Despite the negative connotation of HP that emerged in the popular media, the exploration of the construct of HP in academia has begun only in recent years. This section of the review focuses on the conceptualization of the construct of HP, as well as the effects of HP on college students as reported by the empirical studies. Two broad research trends may exist in terms of parental involvement in children's higher education. The first is from the standpoint of higher education and institutional administration and is focused more on the influences of parental involvement and over-involvement on higher education; the second is from the perspective of the parent-college child relationship and is focused more on the nature of parenting and their effects on college students. This dissertation study falls into the second category.

A recent search in the PSYINFO database was conducted by title, abstract, and keyword with the descriptors such as helicopter parenting, and helicopter parents(s). The search revealed that from 2007 to 2015 (9 years) only 15 articles focused on HP, including 11 scholarly journals, one conference paper, three dissertations and theses, and one book chapter. A close examination of the scholarly journals resulted in 10 research studies conducted between 2011 and 2015 falling into the above-mentioned second category (e.g., Bradley-Geist & Olson-Buchanan, 2013; Fingeman et al., 2012; LeMoyne & Buchanan, 2011; Padilla-Walker & Nelson, 2012; Nelson, Padilla-Walker, & Nielson, 2015; Schiffrin et al., 2013; Segrin, Givertz, Swaitkowski, & Montgomery, 2015; Segrin, Woszidlo, Givertz, Bauer, & Murphy, 2012; Segrin, Woszidlo, & Montgomery, 2013; Shoup, Gonyea, & Kuh, 2009). These studies share some common features. For example, all the reviewed studies were cross-sectional and used self-reported questionnaires. In addition, most study participants were college-aged Millennials. Moreover, the majority of the

studies used newly developed scales to measure the construct of HP. This is probably due to the popularity of the phenomenon of HP in recent years and the close publication time of these studies.

**Conceptualization of the construct of HP.** Research on the conceptualization of HP suggests a disconnection between HP and the parenting research tradition. In order to understand the conceptualization issues of HP, and its relations with other parental constructs, this section reviews the relevant parenting literature as follows: (1) helicopter parent controlling (HPC) practice, (2) dimensional approach to parenting, and (3) HPC and three established parental control constructs.

***HPC practice*.** Theoretically and conceptually, most researchers agreed that HP practices were a form of control. Specifically, researchers either hypothesized HP as over-controlling and *overparenting* (e.g., Schiffrin et al., 2014; Segrin et al., 2012), or as a form of control that was distinct from other parental control constructs (e.g., Padilla-Walker & Nelson, 2012). By over-controlling, Schiffrin et al. meant that HP was not age-appropriate, and was contrasted to children's increasing need for autonomy over a time during which they strived to become independent young adults. By conceptualizing HP as a form of overparenting, which was factored as multidimensional to include parents' developmentally inappropriate tactics to their children, Segrin et al. meant that HP was associated with controlling.

Many researchers not only agreed on the controlling feature of HP, they also maximized the feature to make the two constructs of HP and HPC indistinguishable. For example, Schffrin et al. (2014) studied the effects of HP on college students' well-being and developed a new scale to measure HP. The new HP scale was, in fact, about the HPC practice, as indicated by the scale items (e.g., "my mother monitors who I spend time with", p. 552). Similarly, Padilla-Walker and

Nelson (2012) developed a scale which intended to measure HP. The behavioral items in the scale assessed the degree to which parents made important decisions for their children (e.g., "my parent intervenes in settling disputes with my roommates or friends", p. 1181). The scale actually measured a helicopter parent's controlling practice.

It is necessary to point out that researchers' agreement on the controlling feature of HP does not mean that they agree on the same controlling practices. For example, from those newly developed, unidimensional HP scales (e.g., Odenweller et al., 2014; Padilla-Walker & Nelson; Schffrin et al. 2014), researchers concluded different kinds of controlling practices, such as making decisions for college-aged children (Odenweller et al.; Padilla-Walker & Nelson), and monitoring college children's activities (Schffrin et al.). Apparently those researchers theorized and hypothesized HPC practices differently.

In addition to the examination of the specific controlling practices that can be used to define the construct of HP, it is necessary to embed the new construct of HP into the parenting research tradition. By using the most accepted approaches of defining parenting constructs, and by comparing HP with other well-established parenting constructs, the newly distinguished construct of HP can be defined.

***Dimensional approach to parenting.*** Traditionally, two major methodological approaches have been used to examine parenting: dimensional approach and typological approach (Mandara, 2003; Power, 2013). *Dimension* referred to variable aspects of individual behavior concluded from the consistency of study findings across samples, methods, and analytic approaches (Barber, Stolz, & Olsen, 2005; Power); whereas *typology* referred to "a hierarchical system of categories used to organize objects according to their similarities and dissimilarities" (Mandara, p.132). Often the dimensional approach was viewed as a variable-centered method,

and typological approach was viewed as a case-centered or a person-centered method (Mandara; Power).

In the parenting literature, although the typological approach has been widely used in examining parenting styles, such as the well-known Baumrind's typology of parenting (1967; 1968), the pioneering work done by Maccoby and Martin (1983) made it possible to examine parenting styles by using a dimensional approach. Since then, the dimensional approach has become a popular approach in parenting research. Maccoby and Martin used two dimensions to capture the intersection function of Baumrind's parenting styles, and they labeled the two dimensions as Responsiveness, and Demandingness. *Responsiveness* refers to "the extent to which a parent fosters individuality and self-assertion by being attuned, supportive, and acquiescent to children's requests"; and *demandingness* refers to "the claims parents make on children to become integrated into society by behavior regulation, direct confrontation, and maturity demands and supervision of children's activities" (Baumrind, 2005; p. 61).

Although labeled differently, responsiveness means the same as acceptance, warmth and support, the terms used widely in the parenting literature; and demandingness means the same as control, a term that is widely used by parenting researchers (Rollins & Thomas, 1979). In short, the dimensional approach has been popular in parenting research, and the two essential parenting dimensions, which are used to define parenting styles, are acceptance/warmth, and control. Thus far, the dimensional approach has not been used to define the construct of HP.

***HPC and three established parental control constructs.*** Although the phenomenon of HP is primarily applied to the college student population, and the overall parenting research is scarce after adolescence, it is necessary to understand the parental control constructs that have been dominantly used in the childhood and adolescence literature. Parenting practices or styles

during emerging adulthood may be the extensions from childhood and adolescence.

In parent-adolescent literature, three distinct parental control dimensions have been researched, and they are as follows: behavioral control, psychological control, and autonomy support. Some researchers (e.g., Barber, 1994; Silk et al., 2003) have investigated these constructs and their interrelationships. Their research findings consistently supported the distinction of these constructs on the dimensional space. Conceptually, *Behavioral control* is defined as parenting that "regulates the child's behavior through rules, restrictions, and knowledge of a child's day-to-day behavior" (Barber et al., 1994, p. 1121); *psychological control* refers to parental control that constrains, invalidates, and manipulates the child's psychological and emotional experience and expression (Barber, 1996; Barber, et al., 2005); and *autonomy support* refers to parental encouragement of a child's individual expression and decision-making (Silk et al., 2003).

The effects of these control constructs on adolescents are also different. While both are called control, behavioral control is most likely associated with positive child outcomes, and psychological control is usually related to negative outcomes on adolescents. In particular, behavioral control was negatively associated with adolescents' risk behaviors (e.g., Barber et al., 2005; Eccles, Early, Fraser, Belansky, & McCarthy, 1997; Gray & Steinberg, 1999; Kakihara, Tilton-Weaver, Kerr, & Stattin, 2010; Padilla-Walker, Nelson, Madsen, & Barry, 2008), and psychological control was positively associated with adolescents' internalized problems in both cross-sectional and longitudinal studies (e.g., Barber, 1996; Barber, Olsen, & Shagle, 1994; Barber et al., 2005; Reitman & Asseff, 2010; Sher-Censor, Parke, & Coltrane, 2011; Soenens, Luyckx, Vansteenkiste, Duriez, & Goossens, 2008; Soenens, Park, Vansteenkiste, & Mouratidis, 2012). In addition, in some cases, psychological control is positively related to externalized

problems (Barber, 1996; Barber et al., 2005). As for autonomy support, its effects have been negatively associated with both internalized and externalized problems in samples of adolescents and college students (Eccles et al., 1997; Gray & Steinberg, 1999; Patock-Peckham & Morgan-Lopez, 2009; Sher-Censor et al., 2011).

In the HP literature, research is limited in terms of the relationship between the HPC construct and the three parental control dimensions, both quantitatively and qualitatively. It is unclear to what extent HPC is related to those established parental control constructs. For example, in a study on the effects of HP on college students' well-being, Schiffrin et al. (2014) conceptualized that HP was a form of behavioral control, and developed an HP scale in which items captured the features of behavioral control (e.g., monitoring). However, the relationship between HP and behavioral control was not tested in the study. In another study, through factor analysis, Padilla-Walker and Nelson (2012) found that HP items were loaded separately from both behavioral control and psychological control items, and the former was positively and moderately associated with the latter. Despite the intention of the study to distinguish the parental control constructs, the fact remains that the rigor of the study is questionable. One item of the newly developed HP scale that was loaded above .40 on the behavioral control factor was remained. Such a cross loading item may indicate a poor reliability of the new HP scale.

To summarize, the two constructs of HP and HPC have not been clearly separated in the literature. Parental control and warmth are the two essential parenting factors, as indicated by using the dimensional approach. In addition, three distinguished constructs of parental control have been established in the parenting literature during adolescence; however, the relationship between HPC and those constructs is not clear. Because of these issues in understanding the construct of HP, the current study focused on the conceptualization of the HPC construct.

**Helicopter parent controlling measure.** A search on existing measurement scales of HP indicated that six instruments had been developed and used within the last four years (2011-2014) (see Table 1). Because of the popularity of the HP phenomenon in recent years, and the unavailability of HP instruments in the literature when the researchers conducted their HP research, most researchers developed new instruments to measure HP. Although the internal consistency, as assessed by Cronbach's alphas, was over .70 in the six original studies in which the six new scales were evaluated, information regarding psychometric properties, such as test-retest reliability and construct validity, is scarce.

In addition, some items from several of these scales overlapped, intending to state similar parenting behaviors, attitudes, opinions or beliefs. This might create confusion and difficulty for researchers and consumers to choose. Therefore, in order to better understand the HP phenomenon, and the construct of HPC, this researcher decided to create a new instrument to measure HPC practices by using the currently available HP measures.

**Effects of helicopter parent controlling practices on college students.** Although some research findings indicated mixed results, the majority of the study findings on HP revealed HP's negative outcomes on college students. The results categories, sorted by the major research findings associated with HP, were reviewed and include the following: (a) psychological functioning, (b) personality traits, (c) cognitions, and (d) positive results.

Table 1

*Summary of Existing Helicopter Parenting Scales (2011 – 2014)*

| Scale | Authors (year) | Factor Analysis and Solution | Nature | Cronbach's Alpha |
|---|---|---|---|---|
| Over-parenting Scale | Bradley-Geist & Olson-Buchanan (2014) | EFA; one factor | To assess whether students felt that their parents/guardians were too involved in their lives. | 0.83 |
| Helicopter Parenting Scale | LeMoyne & Buchanan (2011) | PCA; one factor | In retrospect, to capture the extent to which the individual felt her or his parents were controlling and transactional in their overall treatment of the respondent. | 0.71 (LeMoyone & Buchanan, 2011); 0.68 (Odenweller et al., 2014) |
| Helicopter Parenting Instrument | Odenweller, Booth-Butterfield, & Weber (2014) | EFA; one factor | Millennials' perceptions of their parents' current developmentally inappropriate behaviors. | 0.78 |
| Helicopter Parenting | Padilla-Walker & Nelson (2012) | EFA; one factor | To assess the degree to which parents make important decisions for their emerging adult children. | 0.87 (Child report mother); 0.84 (child report father); 0.77 (mother report); 0.78 (father report) |
| Helicopter Parenting and Autonomy Supportive Behaviors | Schiffrin et al. (2014) | EFA; two factors: helicopter parenting behaviors, and autonomy supportive behaviors | To assess students' concerns of their mother's controlling behaviors. | 0.77 |
| Overparenting (for parents) | Segrin et al. (2012) | EFA; four factors: Anticipatory Problem Solving, Advice/Affect Management, Child Self-Direction, Tangible Assistance | To assess parents' overly involved and developmentally inappropriate tactics to their children. | 0.89 (Segrin, Woszidlo, Givertz, & Montgomery, 2013) |

*Note.* EFA = exploratory factor analysis; PCA = principle components factor analysis.

***Psychological functioning.*** Several studies were focused on the relationship between HP practices and college students' depression, anxiety, stress, psychological well-being, and life satisfaction (e.g., LeMoyne & Buchanan, 2011; Schiffrin, et al., 2014; Segrin, et al., 2013). Using a sample of college students (N = 297, $M_{age}$ = 19.34 years, SD = 1.27 years) and their

newly developed HP scale, Schiffrin et al. tested the hypothesis that HP would be indirectly related to college students' mental health outcomes (i.e., depression, anxiety, and life satisfaction) through its impact on students' basic psychological needs (i.e., autonomy, competence, and relatedness). Study results showed no effect on anxiety, but HP had both significant indirect effects on depression through both autonomy and competence, and on life satisfaction through competence.

In another study, using ordinary least squares regression, and their newly developed retrospective HP instrument on a sample of college students (N = 317, $M_{age}$ = 19.1 years, SD = 1.17 years), LeMoyne and Buchanan (2011) found a negative relationship between HP and psychological well-being, which was measured using the Eudemonic Well-Being Instrument (Ryff, 1989). Further, results of the logistic regressions indicated that after controls, the odds of taking prescription medications for either anxiety or depression were 3.13 times more likely for every one-unit increase in perceived HP. In addition, women were significantly more likely to take prescription medications for anxiety or depression than men.

In a sample of parent-child dyads (N = 653, child $M_{age}$ = 20.03 years, SD = 2.32 years), Segrin et al. (2013) tested models in which both parent and student's reports of overparenting affected indirectly on students' stress and anxiety through students' coping skills. The used HP scale for parents was Overparenting, developed by Segrin et al. (2012), and the used HP scale for students was from Montgomery (2010), which had not been published in peer-reviewed journals. In short, these study findings indicated consistently that HP was negatively associated with college students' psychological functioning.

***Personality traits***. Other research findings revealed that HP was associated with some personality traits of college students, such as narcissism (Segrin, et al., 2013), entitlement

(Segrin, et al., 2012), neuroticism, and interpersonal dependency (Odenweller et al., 2014). By using the same overparenting instrument reported by parents, and HP scale reported by college students, Segrin and colleagues (2012; 2013) found that HP significantly and positively predicted entitlement and narcissism. In addition, Pearson correlation coefficients revealed moderate and positive relationships between HP and neuroticism, as well as between HP and interpersonal dependency in which HP was reported by college students, and was measured by the new scale developed by the authors (Odenweller et al.).

***Cognitions.*** Different from the above-mentioned consistent results on psychological functioning and personality traits, study findings were mixed on the relationship between HP and college students' cognitions. The cognition indicators tested in these studies included self-efficacy, self-worth, social self-efficacy, coping efficacy, and emotional intelligence (e.g., Bradley-Geist & Olson-Buchanan, 2014; Nelson et al., 2015; Odenweller et al., 2014; Padilla-Walker & Nelson, 2012; Segrin, et al., 2012). While some researchers (i.e., Bradley-Geist & Olson-Buchanan, Nelson et al., Odenweller et al.) found HP or overparenting, as measured by the newly developed scales, was negatively related to students' general self-efficacy, social self-efficacy, self-worth and coping efficacy, other researchers (e.g., Segrin et al., Padilla-Walker & Nelson) did not find a significant relationship between HP and social adaptive traits (i.e., social self-efficacy, positive relations with others, general self-efficacy, and emotional intelligence). In these studies, HP was measured by the newly developed scales, and social self-efficacy and general self-efficacy were measured by the same two subscales as Bradley-Geist and Olson-Buchanan.

***Positive results***. Contradictory to most study results, a few researchers reported that HP was correlated with some positive effects (e.g., Shoup et al., 2009) on children. Using existing

national data from the 2007 administration of the National Survey of Student Engagement (NSSE, 4,532 freshmen and 4,652 seniors; 95% were 24 years old or younger), Shoup et al. found that college students who reported having the most involved parents (i.e., those very often in contact with their college-aged children, and frequently intervening on their behalf), responded on "higher levels of engagement," "greater self-reported gains," "more frequent use of deep learning activities, " and "greater satisfaction with their college experience." Interestingly, in the same survey, the students with involved parents also reported significantly lower grades (NSSE, 2007). It is important to note that the study might be questionable by its measurement of parental involvement. Only two survey items were used to assess parental involvement, such as "During the current school year, how often have you communicated via phone, e-mail, text messaging, or another electronic medium with a father, mother or guardian?" and "How often do your parents/guardians contact college officials to help solve problems you may be having at this college?" (Shoup et al., p. 13).

In short, research on HP is new and exploratory by nature. Most researchers reported negative effects of HP on college students. In addition to the limitation of the cross-sectional design, using newly developed scales to measure HP in the respective studies was also a limitation because the reliability and validity of these scales were not well established.

**Helicopter parenting and parental acceptance/warmth.** In parenting dimension research, parental control and acceptance/warmth (AW) are the two essential dimensions. Understanding the dimension of AW would help to conceptualize the construct of HP. The theoretical rationale for parental acceptance/warmth was attachment theory (Ainsworth et al., 1978; Bowlby, 1969), which illustrated the importance of parent-child bonding across a child's developmental stages. In fact, the parent-child attachment bond remains crucial in college

because college students are in need of support and guidance to deal with unfamiliar and overwhelming times, even though they have the ability to become autonomous (Kolkhost et al., 2010). Research findings indicated that, even during emerging adulthood, parental AW remained a central component in the parent-child relationship, and in relation to positive child outcomes (Nelson, Padilla-Walker, Christensen, Evans, & Carroll, 2011). In general, parental *acceptance/warmth* refers to a parent's positive evaluation, sharing, expression of affection, emotional support, and egalitarian treatment (Schaefer, 1965). AW is an essential dimension of parenting behavior (Maccoby & Martin, 1983; Rollins & Thompas, 1979). Surprisingly, less research effort on AW was found than on control in the HP literature. The review on parental AW is organized as follows: (1) parental AW in HP research, and (2) overview of parental AW research in general.

***Parental acceptance/warmth in HP research***. Three HP studies have focused on parental AW. In the first study, Fingerman et al. (2012) viewed HP from the parental support perspective and conceptualized that HP was a form of "intense support", which was defined as occurring several times a week on average and related to the six forms of support (i.e., emotional, practical, socializing, advice, financial support, and listening). Through phone interviews and surveys of parents and their grown children from communities ($M_{age}$ = 23.82 years, SD = 5.13 years, age range: 18-41 years), Fingerman et al. found that grown children who received intense support reported better psychological adjustment and life satisfaction than grown children who did not receive intense support, though both parents and grown children who engaged in such frequent support viewed it as non-normative.

The next two sets of study findings were from a same study inquiry but were investigated using different research methods. In the first study report, Padilla-Walker and Nelson (2012)

took a standpoint that HP was a form of parental control, and investigated the relations between HP and AW in a sample of 438 college students ($M_{age}$ = 19.65 years, SD = 2.00 years, age range: 18-29 years), and parents. Two latent variables, HP and parental warmth, were measured by the newly developed HP scale, and the warmth subscale of the Perception of Parents: College Student Version (Grolnic et al., 1991; Robbins, 1994). Four reports, from both students and parents, were used. In this study, college students' report of the emotional support they received from their parents was also investigated, which was measured by a subscale from the Social Provisions Questionnaire (Carbery & Buhrmester, 1998). While the correlation between measures of parental warmth and parental emotional support was unknown because the authors did not report it, the mixed study results of the relations between HP and parental warmth (*not significant*), and between HP and parental emotional support ($r$ = .10, $p$ < .05) challenged the rigor of the study. It might be that parents' reports of parental warmth created errors in the study.

In the second report, Nelson et al. (2015) used hierarchical regression analyses to examine both child-reported HP and parental warmth on self-worth, school engagement, and risk behaviors. This time, they found a significant two-way interaction between maternal HP and warmth. Findings indicated that parental warmth served a moderator role in the relationship between HP, and self-worth and risk behaviors.

***Overview of research on parental acceptance/warmth in general.*** Two broad lines of research focused on parental AW in the parent-child relationship literature, and the social support literature. The overall parent-child relationship research suggested that perceived AW from parents positively affected children. For example, in a sample of 8,700 adolescents (age range: 14-18 years), Gray and Steinberg (1999) found that perceived AW was associated with three sets of outcome variables, including psychosocial development (i.e., self-reliance, self-esteem, and

work orientation), internal distress (i.e., psychological symptoms and somatic symptoms), and behavior problems (i.e., drug and alcohol use, peer conformity, school deviance, and antisocial behavior). In another large international study, using multiple samples (age range: 11-17 years) from several nations and ethnic groups, Barber et al. (2005) found a structural path between AW and depression, a finding supported in both U.S. sample and cross-national samples.

Research on parental AW is not only limited within the family context, but this line of research is also found within the social context. From a social support perspective, a parent is a meaningful source of social support, even when a child goes to college. Parental AW continues to be a strong factor. For example, the presence of conflict in a parent-child relationship did not weaken the positive influence of social support that comes through the same relationship (Barrera et al., 1993). In a qualitative study of 58 third year college students ($M_{age}$ = 20.6 years, age range: 20-21 years), Kolkhost et al. (2010) examined the extent to which parents supported students during college. They found that these participants frequently turned to their parents for many different types of support, and the parent-child relationship was able to, either positively or negatively, impact college students.

In addition to examining the relationship between parental AW and child outcomes, researchers have also focused on the interactive or buffering effects with parental AW. For example, one study showed that parental AW, along with ethnic identity, moderated the effects of low socioeconomic status on academic achievement in a sample of 123 Latino college students who were followed over a 3-year period in a longitudinal investigation (Ong et al., 2006). In another sample of 105 college students, Pengilly and Dowd (2000) investigated the moderating effect of social support on the relationship between stress and depression, and they

found that students with relatively high levels of social support were less prone to depression in the face of stress.

In sum, parental AW is a central dimension in the parenting research. Yet, its relationship with the construct of HPC was not clear. In addition, parental AW has been consistently associated with adolescents' psychological functioning. Furthermore, the moderation effects of parental AW have been documented in the literature.

**Chapter Summary**

Millennials live in a different social and cultural context from prior generations. The new generation is distinguished by delay entering into adulthood, as well as by a close parent-child relationship. Many college-going Millennials have unusually frequent contact with parents and experience overly involved parenting. For college students, parental support and attachment are needed. On the other hand, parents' over involvement and interventions in their education and daily activities conflict with students' psychological need for autonomy.

Strong national data and anecdotal evidence of concerns from higher education institutions and helping professionals all indicated that HP might be a problem. With the changing dynamics of the relationships between college-going Millennials and parents, and between higher education institutions and parents, research efforts are strongly needed to investigate the construct of HPC and its effects on college students from the Millennial generation. Due to the new topic of HP, the essential conceptualization of the HPC construct has not been strongly established, especially within the context of the parenting research tradition. Therefore, an empirical conceptualization on HPC is needed because it is the first and primary step for any research attempt that involves HP.

# CHAPTER III

# METHODOLOGY

This chapter presents the characteristics of the participants, measurement instruments, protocols used for the tests administered in two samples, and methods utilized for data analyses. Driven by the research questions of the study, a cross-sectional *survey research* approach was used in this study, and survey data were collected by self-report questionnaires. The chapter is organized by the sections of the initial procedure of the Helicopter Parent Controlling (HPC) scale development, and the two phases of the study conducted with two samples. The focus of the first phase was to evaluate the suitability of the items for inclusion in phase two of the study, and to extract the best fit model(s) of factor structure. The aim of the second phase was to validate the new HPC scale, and to test other path models using the new HPC scale.

## Initial Procedure of Generating HPC Scale Items

The scale development process began with the creation of items to assess the construct of HPC. Because little theory existed on the construct of HPC, the "inductive approach" was used in which scale items are generated first based on current available HP measures (Hinkin, Tracey, & Enz, 1997, p. 101). In this study, the rule of original item selection for further consideration was that an item had to be targeted on parents' current behaviors. Compared with assessing one's opinions, beliefs, and attitudes on HP, assessing a student's experienced parenting behaviors is direct and efficient. In addition, current behaviors, rather than the past behaviors were considered because the new scale of HPC was designed to measure parents' behaviors that students are currently experiencing. Among the six existing HP scales, 25 current-behavior items were first selected from four of them (see Appendix D – I). After checking item duplications, three

duplicated items were then removed. Thus the final 22 items were identified as the potential items to measure the construct of HPC (see Appendix D – II).

Next, all items were reworded to reflect a unified time interval and stimuli object. For the new HPC scale, the time interval of experiencing HPC behaviors was framed as "in the past month," and the stimuli object was framed as "a primary caregiver" (with a separate question to ask who the primary caregiver they refer to is). The use of *primary caregiver*, rather than *mother*, *father* or *parents* is due to the reason that the gender of a parent is not the interest of this study, and the dynamic of parenting may change when asking both parents together. After the above mentioned procedures, the original pool of revised items to measure HPC was born (see Appendix D for the list of 22 items). A sample item is as follows: "How often has your primary caregiver intervened in settling disputes with your roommates or friends in the past month?" The response scales were decided as 1-5 (1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *most of the time*, and 5 = *always*).

After the items were migrated to the online survey tool QuestionPro, the 22 items were first piloted in a small group (N = 5) of graduate students who volunteered to provide assistance. These students were from the Millennial generation (between the age range of 18 and 33 years), and were enrolled at the same Midwestern university where the data were collected. The reason for using graduate students to pilot was because they were not from the potential participant group for this study (i.e., undergraduate students), yet they were from the Millennial generation. The instructions given to pilot test participants clearly addressed the purpose of the pilot testing: testing the survey process, rather than the survey content. Accordingly, volunteers were not given test scores as a test result. The pilot was focused on: (a) wording of the items, (b) clarity of the instructions given to each survey section, and (c) the overall time the volunteers took to

complete the survey, and their overall feedback. After the pilot, a few items were reworded according to the feedback from the volunteers. The next step then was to test the underlying dimensional structure of 22 items in the sample of undergraduate students at a large, public university in the Midwestern United States.

**Participants in Phase One**

The population of interest for this study was college students who were born into the Millennial generation (between the age of 18 and 33 years old as of 2015), who were enrolled as college or university undergraduate students, and who lived in the U.S. when the data were collected. For the Phase One of the study, the participants consisted of 755 college students (34.91% men) enrolled as undergraduate students at a large, public Midwestern university in the U.S. Students ranged in age from 18 to 33 ($M_{age}$ = 21.13 years, SD = 2.80 years). Students were from a number of racial and ethnic backgrounds and nationalities, including European American (74.97%), African American (7.15%), Hispanic/Latino (Mexican American, Puerto Rican, Cuban, etc.) (3.71%), Asian or Pacific Islander (2.25%), Indian/Native American (1.06%), Middle Eastern (0.66%), Multiethnic (10.20%), and International Student (3.82%). Over 75% of the participants reported their GPAs were above 3.0. The detailed GPAs ranges were: 3.51-4.0 (45.96%), 3.01-3.50 (29.80%), 2.51-3.0 (19.07%), and below 2.50 (5.17%). The participants' years of college were various, including the first year (24.77%), the second year (16.42%), the third year (23.05%), the fourth year (19.34%), and the fifth year or above (16.42%). As reported, less than half of participants (38.28%) lived on campus.

The primary caregivers identified by participants consisted of biological mothers (75.99%), biological fathers (17.68%), and others (6.33%; e.g., adoptive mothers, foster mothers, adoptive fathers, stepmothers, and stepfathers). Over half of the primary caregivers had

bachelors' degrees (28.61%) or above (i.e., 17.48% graduate degrees and 5.43% professional schools). The rest had some college (26.09%), high school graduates or equivalent (18.01%), less than high school (3.18%), and unknown (1.19%). In terms of the primary caregivers' relationship status, the majority of them were married, engaged or remarried (72.72%). The rest were single or in a dating relationship (19.74%), in a partnered relationship (3.84%), or were windowed, divorced, or separated (3.71%).

**Data-Collection Procedure in Phase One**

Once the Midwestern university's Human Subjects Institutional Review Board (HSIRB) approved the study proposal (see Appendix A for the HSIRB Approval Letter), this researcher contacted the university's Institutional Research (IR) office to request the assistance for study recruitment. The IR, along with the assistance from the Office of Information Technology, first selected 17,516 undergraduate students who met with the age range requirement, and then divided them randomly into two even groups, with 8,758 students in each group. Accordingly, two group e-mail addresses were generated (without showing individual email addresses).

The online survey tool QuestionPro (www.questionpro.com) was used to collect survey data. The informed consent was placed first on the front page, and each section of survey included instructions (see Appendix B for the consent form). Using the first group email address, this researcher sent out the original announcement on October 6, 2015 to recruit participants for the first phase of the study, followed by a follow-up e-mail a week after (see Appendix C for the email announcements). In each email, the purpose of the study was introduced, and the confidentiality of participation was addressed. The URL linked to the survey was included in the email body. The survey was anonymous, and participation was completely voluntary. As an incentive, 20 amazon.com gift cards ($10 each) were given to participants who entered

themselves into drawings at the end of the online survey. Nine hundred and twenty nine, out of the 8,758 potential participants, responded to the survey, but only 755 completed. Thus the complete response rate, after both participation request emails, was 9%. Overall, the sample's racial and ethnic characteristics reflected the ratio in the university's undergraduate population. For example, in fall 2014, 72.5% of 16,399 undergraduate students were European American/White, 22.5% of them were minorities, and 5% of them were international students.

**Instrumentation in Phase One**

The specific properties of each instrument used in Phase One are discussed below. The original measures used for creating the new HPC scale include four scales (Appendix D-I). In addition, participants were asked to answer some demographic questions. Unless otherwise noted, responses to all parenting instruments were solicited on a 1-5 scale (1 = *never*, 5 = *always*) to ask the respondents' experiences of their primary caregiver's certain parenting practices in the last month, with higher scores representing greater endorsement of the measured variable.

**Helicopter Parenting Scale (HPS).** All five items from the HPS (Padilla-Walker & Nelson, 2012) were selected for the new scale of HPC. Padilla-Walker and Nelson created the HPS to assess the degree to which parents make important decisions for their adult child. A sample item is as follows: "My primary caregiver makes important decisions for me (e.g., where I live, where I work, what classes I take)." In the sample of 438 undergraduate students, along with at least one of each student's parents (376 mothers, 303 fathers), Padilla-Walker and Nelson reported adequate reliability for both child-reported and parent-reported HPS ($\alpha$ range between .77 and .87). In terms of the construct validity, the authors conducted an exploratory factor analysis using oblique rotation on the HPS and the scales of behavioral control and psychological control (for child-reports only), and findings indicated these constructs were distinct.

**Helicopter Parenting and Autonomy Supportive Behaviors (HPASB).** Six items from the Helicopter Parenting Behaviors subscale of the HPASB (Schiffrin et al., 2014) were selected for the new scale of HPC. The original HPASB scale consists of two subscales: nine-item Helicopter Parenting Behaviors, and six-item Autonomy Supportive Parenting Behaviors. Three items from the Helicopter Parenting Behaviors subscale were not selected because they are duplicated with some items from the HPS. A sample item is as follows: "My primary caregiver regularly wants me to call or text her to let her know where I am." Exploratory factor analysis was used to test the factor structure between two subscales in a sample of 297 college undergraduates (Schiffrin et al.), and a two-factor solution resulted, with Helicopter Parenting Behaviors accounting for 20.77% of the variance and Autonomy Supportive Parenting Behaviors accounting for 9.73% of the variance. A Cronbach's alpha of .77 was reported on the Helicopter Parenting Behaviors.

**Helicopter Parenting Instrument (HPI).** Seven items from the HPI (Odenweller, Booth-Butterfield, & Weber, 2014) were selected for the new scale of HPC. The original HPI includes 15 items. The reason for not selecting the other eight items was because those items were either targeted on beliefs, or attitudes, or were duplicated with the items selected ahead. The original HPI resulted from an exploratory factor analysis with varimax rotation in a sample of 268 university students. The final 15 items accounted for 54.94% of the variance, with single factor solution. A sample item is as follows: "My primary caregiver overreacts when I encounter a negative experience." Reliability consistency, assessed with Cronbach's alpha, was reported as .78 (Odenweller, et al.). In addition, the HPI was reported to be correlated with another helicopter parenting scale from LeMoyne and Buchanan (2011) ($r$ = .63, Odenweller, et al.).

**Overparenting (OP).** Six items from the OP (Segrin, et al., 2012) were selected for the new scale of HPC. The original OP measure was used to assess parents, rather than college students. There were four subscales in the original OP measure: Anticipatory Problem Solving, Advice/Affect Management, Child Self-Direction, and Tangible Assistance. The OP scale's objective was to "assess such phenomena as offering advice, problem solving for the child, providing tangible assistance to the child, protecting the child from risk, monitoring and attention to the child…" (Segrin, et al., p. 242). A revised sample item is as follows: "My primary caregiver tries to solve problems for me before I even experience them." Exploratory factor analysis resulted in a four-factor solution. The factor of Anticipatory Problem Solving explained the most variance (20.30%) from which six items were selected to develop the HPC. As the original OP was designed to assess parents, these selected items were reworded to be used to assess children. The Reliability estimate was reported as .89 in a sample of 653 parent-adult child dyads (Segrin, Woszidlo, Givertz, & Montgomery, 2013).

**Data Analysis Approach in Phase One**

Factor analysis, particularly the common factor model (CFM, Thrustone, 1947) was used as the primary analysis method. The CFM was chosen because it discriminates shared variance from unique variance, and only shared variance of a variable is helpful to understand the underlying structure of the HPC practices (Costello & Osborne, 2005). Practically, the CFM consists of exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) (Jöreskog, 1969, 1971). The difference between the two factor analyses is that EFA is a data-driven approach, and primarily is used to develop psychometric measures; whereas the CFA is a theory-driven approach, and primarily is used to validate psychometric measures (Brown, 2006).

Because the aim of the study's Phase One was the development of a new HPC scale, the EFA, rather than the CFA, was used as the primary data analysis method.

**Participants in Phase Two**

In the second phase of the study, the participants consisted of 551 college students (32.67% men) who enrolled as undergraduate students at the same large, public Midwestern university as in the first phase of the study. Students ranged in age from 18 to 33 ($M_{age}$ = 21.07 years, SD = 2.65 years), and were from a number of ethnic and nationality backgrounds, including European American (80.94%), African American (8.35%), Hispanic/Latino (Mexican American, Puerto Rican, Cuban, etc., 4.54%), Asian or Pacific Islander (2.90%), Indian/Native American (.54%), Middle Eastern (.54%), Multiethnic (2.18%), and International Students (1.45%). There were 80% of the participants who reported above 3.0 GPAs (45.37% in the range of 3.51-4.0, and 34.30% in the range of 3.01-3.50). The other GPA ranges included 2.51-3.0 (16.33%), and below 2.50 (4.35%). The participants' years of college were various, including the first year (19.78%), the second year (19.78%), the third year (23.59%), the fourth year (21.96%), and the fifth year or above (14.88%). As reported, less than half of participants (37.57%) lived on campus.

The primary caregivers identified by the participants included biological mothers (76.04%), biological fathers (17.24%), and others (6.72%; e.g., adoptive mothers, foster mothers, adoptive fathers, stepmothers, and stepfathers). Nearly half of these primary caregivers had bachelor's degrees (26.50%) or above (graduate degrees, 16.33%, and some graduate or professional schools, 5.63%). The remaining educational attainment for the primary caregivers included some college (27.04%), high school graduates or equivalent (20.33%), less than high school (3.63%), and unknown (0.54%). In terms of the primary caregivers' relationship status,

the majority of them were married, engaged or remarried (73.68%). The rest were windowed, divorced, or separated (13.61%), were single or in a dating relationship (6.17%), or were in a partnered relationship (3.63%).

**Data-Collection Procedure in Phase Two**

The overall procedure of data collection in Phase One is relevant to the study's Phase Two. Using the second group email addresses generated by the university's IR and Office of Information Technology, the researcher sent out the Phase Two's original email announcement on November 8, 2015 to recruit participants, followed by a follow-up email a week after. In each email, the purpose of the study was introduced, and the confidentiality of participation was addressed. The URL linked to the survey was included in the emails. The survey was anonymous, and participation was completely voluntary. As an incentive, twenty $10 amazon.com gift cards were given to participants who entered themselves into the drawings at the end of the online survey. Five hundred and eighty three, out of 8,758 potential participants, responded to the survey, and only 551 completed. Therefore the complete response rate, after the initial and follow-up email invitations, was 6% for Sample Two.

**Instrumentation in Phase Two**

The specific properties of each instrument for the second phase of the study are discussed below. The measures included the HPC, the parental AW, and the perceived stress. In addition, participants were asked to answer some demographic questions (similar items with the first phase of the study). Unless otherwise noted, responses to all parenting instruments were solicited on a 1-5 scale (1 = *never*, 5 = *always*) to ask the respondents' experiences of their primary caregiver's certain parenting practices in the last six months, with higher scores represented greater endorsement of the measured variable.

**Helicopter parent controlling (HPC) measure.** The scale used to measure HPC was the newly developed HPC measure in the study. In the first phase of the study with a sample of 755 college students, the original 22 items (see Appendix D-II) were factored using the exploratory factor analyses with the robust least squares estimation and the oblique rotation methods in Mplus (7.4, Muthén and Muthén, 1998-2015). Both three-factor and four-factor solutions (see Appendix D-III and Appendix D-IV) had adequate data-model fit. The three factors were labeled as Precautionary Actions, Problems Solving, and Physical Concerns; and the four factors were labeled as Precautionary Actions, Problem Solving, Physical Concerns, and Whereabouts Concerns. The omega coefficients of the reliability for the three-factor model were .89 (Precautionary Actions), .88 (Problem Solving), and .90 (Physical Concerns); and the omega coefficients of the reliability for the four-factor model were .86 (Precautionary Actions), .84 (Problem Solving), .89 (Physical Concerns), and .85 (Whereabouts Concerns). After the data collection in Phase One, two items (e.g., the primary caregiver voiced her/his opinion about your personal relationships; the primary caregiver accompanied you or asked that you check in with her/him when you had to go somewhere) were removed due to their lower factor loadings and lower communalities during the preliminary screening process using SAS (9.4). Therefore, only 20 items were remained.

**Parental acceptance/warmth (AW) measure.** The parental dimension of AW was measured using the 10-item Acceptance subscale from the 30-item revision of the Child Report of Parent Behavior Inventory (CRPBI, Barber, 1996; Schaefer, 1965). Higher scores indicate greater levels of reported AW from parents. A sample item is as follows: “My primary caregiver gives me a lot of care and attention.” In a sample of both European American and African American adolescents, the Acceptance subscale has been demonstrated to be equivalent for both

ethnic groups, based on the confirmatory factor analysis and item response theory procedures. Reliability estimates for the scale scores have ranged from .85 to .90 for maternal AW and paternal AW (Barber et al., 2005; Bean et al., 2006; Krishnakumar, Buehler, & Barber, 2004). In the current study, the results of the confirmatory factor analysis indicated that the six-item CRPBI fit the data better than the 10-item model; therefore only six items were used in the phase two of the study. The omega coefficient reliability was .89 in the current study.

**College students perceived stress measure.** Stress is a complex construct. Although stress can be conceptualized as a generic term (e.g., Lazarus, 1966), the focus of the current study is on the stress reactions. The Perceived Stress Scale – 10-Item Short Form (PSS-10) was used to access the degree to which situations in one's life are appraised as stressful. The PSS (Cohen, Kamarck, & Mermelstein, 1983; Cohen & Williamson, 1988) has three versions. The original version is a 14-item scale. It was shortened to 10 items (PSS-10) using factor analysis based on data from 2,387 U.S. participants. Meanwhile, a four-item PSS was also introduced (Cohen & Williamson). The PSS-10, rather than the other two versions was chosen for this study due to the superiority of its psychometric properties evidenced in empirical studies (see Lee, 2012 for a review). The PSS-10 asks respondents to report on a 0 to 4 scale (0 = *never*, 4 = *very often*) how often they felt or thought a certain way in the last month. A sample item includes the following: "In the last month, how often have you been upset because of something that happened unexpectedly." Several items are reverse scored, with higher scores denoting higher perceptions of stress.

The internal consistency for the PSS-10, as assessed by Cronbach's alpha, has been reported from .74 to .91 in 12 studies in which it was used (Lee, 2012). The test-retest reliability for the PSS-10 was >.70 in all four studies that tested 1-week, 2-week, and 4-week intervals, as

reported in the review of three versions of PSS by Lee. Confirmed by the findings of the confirmatory factory analysis, a two-factor structure was reported more dominant than a one-factor structure for PSS-10 (e.g., Roberti, Harrington, Storch, 2006; Wang et al., 2011; Wongpakaran & Wongpakaran, 2010) in which two-factor structure accounted for more than 50% of the total variance. In addition, hypothesis testing consistently revealed that the PSS-10 was either moderately or strongly correlated with measures of depression or anxiety (Lee).

In the current study, the findings of the confirmatory factor analysis indicated that a two-factor structure fit the data better than the one-factor structure. The four reverse coded items were loaded together and the factor was labeled as Controllable Stress (e.g., “In the past month, how often have your felt that things are going your way?”). The remaining six items were loaded together and the factor was labeled as Uncontrollable Stress (e.g., “In the past month, how often have you felt that you were unable to control the important things in your life?”). In the models tested in the current study, the range of the omega coefficients for reliability was between .83 and .86 (Controllable Stress), and between .84 and .88 (Uncontrollable Stress).

**Data Analysis Method in Phase Two**

The confirmatory factor analysis (CFA; Jöreskog, 1969, 1971), one of the common factor model (Thrustone, 1947), was conducted using the second sample to examine which models resulted from the exploratory factor analyses (EFA) in the first sample best characterized the new scale of Helicopter parent controlling (HPC). In order to test the associations between the HPC measure and the college students’ perceived stress measure (RQ2), as well as the moderation effect (RQ3), the structural equation modeling (SEM) approach was used to understand the multivariate relationships in the latent space. An SEM model includes two levels: the measurement model and the structural model. The *measurement* model is also known as the

confirmatory factor analysis model, and is often suggested as the first step to be estimated in successfully building and testing a model (e.g., Anderson & Gerbing, 1988). Using the SEM approach, rather than the hierarchical regression approach to test the models in RQ2 and RQ3 is because SEM allows for better measurement of the latent constructs of interest. Because the relationships are estimated in latent space rather than at the level of the measured variables, they can be disattenuated for measurement error and may be stronger as a result (Muthén, 2002).

# CHAPTER IV

# RESEARCH FINDINGS

In this chapter, the results from the two phases of the study are presented. The results of the exploratory factor analyses investigated in the first sample designed to test the new scale of HPC are first presented, followed by the findings of the confirmatory factor analyses investigated in the second phase of the study using the second sample, aiming to validate the new scale of HPC. Finally, the results of the structural equation modeling (SEM) analyses are presented for answering the second and the third research questions.

## Research Findings of Exploratory Factor Analyses in Sample One

All analyses are based on N = 755 unless stated otherwise. All exploratory factor analyses (EFA) were performed with Mplus (7.4, Muthén & Muthén, 1998-2015) using robust weighted least squares estimation. All the 22 observed HPC variables were treated as categorical data, and all analyses reported were conducted on the original values.

**Sample size and missing data.** In order to perform factor analyses such as EFA, the sample size has to be large enough to ensure the reliable estimation of correlation coefficients and to obtain an acceptable level of precision. Based on some rules of thumb, such as minimum sample size of 300 cases (Tabachnick & Fidell, 2001), and minimum number of cases per each freed parameter (e.g., at least 5 to 10 cases per parameter), a sample size of 755 was determined as adequate for factor analyses on 22 observed variables. Although these rules of thumb are derived from study of continuous indicators, there is insufficient literature to guide practice when ordered data are collected. Examination of the individual frequency histograms of the indicator characteristic of data from continuous distribution variables suggests symmetric shapes.

Among the original total cases of 926, there were 171 (18.5%) of them including missing data. Most missing cases were dropped at some point; hence the missingness is not at random. Because the selection criteria specified the age range of the participants (i.e., 18-33 years), cases that could not be identified by age were removed. This resulted in a total of 758 cases with age identification. Among the 758 cases, three cases did not have other demographic information (i.e., ethnicity), thus were removed. Therefore, the final data included in the EFA were 755 cases that included all indicator data.

**Factorability of HPC variables.** Due to the ordinal categorical characteristics of the HPC variables, the polychoric correlation statistics were used to detect whether the 22 items were factorable. As shown in Table E1 (Appendix E), the correlation matrix for the 22 items produced by Mplus (7.4) revealed numerous correlations in excess of .30 and some considerably higher. In addition, all the correlation coefficients were significant ($p < .001$). Therefore, all 22 HPC items were remained for the EFA.

**Robust weighted least squares factor extraction with geomin rotation.** *Factor extraction* is the process of determining the factors that best explain the observed correlation or covariation matrix within the data set; and the *factor rotation* is the process of maximizing the factor loadings for the items that best measure their respective factor. Using the robust weighted least squares estimation in Mplus (7.4) is theoretically justified for the factor analysis of discrete data and it gives the best results (Barendse, Oort, & Timmerman, 2015). By specifying ESTIMATOR = WLSMV with Mplus, a robust weighted least squares estimator using a diagonal weight matrix was used to perform the EFA.

Because the HPC latent factors are supposed to share common features of parental controlling, the nature of the relationships among the factors should be correlated. Therefore, the

factor rotation method used was oblique, rather than orthogonal. In Mplus (7.4), the default oblique rotation is geomin. Browne (2001) provided good arguments for the value of geomin because it outperformed other oblique rotation methods such as promax and quartimin.

The criteria chosen for assisting in determining the appropriate number of factors to retain included Kaiser's criteria (eigenvalue > 1 rule), the Scree test, and the model fit statistics produced in Mplus. For an EFA using weighted least squares estimation, Mplus (7.4) provides four model fit criteria: (1) Chi-Square ($\chi^2$), which evaluates the fit of each model to each data set, with an overall goodness-of fit at a 5% level of significance. Because most criticisms of the $\chi^2$ method are concerned with the effects of sample size (e.g., poor models produce non-significant results with low sample sizes while good models can produce statistically significant results when sample sizes are high), Klein et al. (1994) recommended evaluating the $\chi^2$ result in relation to the degrees of freedom (*df*), with $\chi^2$: *df* values of less than 3:1 suggesting good model fit; (2) the Root Mean Square Error of Approximation (RMSEA), the measure of "discrepancy per degree of freedom" in a model (Browne & Cudeck, 1993), with values < .05 suggesting a good model fit, and values < .08 suggesting reasonable model fit; (3) Comparative Fit Index (CFI, Bentler, 1990) and Tucker Lewis Index (TLI, Tucker and Lewis, 1973), which are incremental fit indices indicating how much better a model fits the data compared to a baseline model where all variables are uncorrelated. Values above .95 indicate good model fit, and values above .90 indicate reasonable fit (Bentler, 1990; Hu & Bentler, 1999); (4) the Standardized Root Mean-Square residual (SRMR, Jöreskog & Sörborn, 1981), which is an absolute measure of fit, and is defined as the standardized difference between the observed correlation and the predicted correlation. Values below .05 indicate good model fit, and values below .08 indicate reasonable model fit (Browne & Cudeck). Because multiple indices provide different information about

model fit, by using them together, they provide a more conservative and reliable evaluation of the solution (Brown, 2006).

The EFA output indicated that four eigenvalues for the sample correlation matrix were greater than one, and they were 9.732 (one factor), 1.719 (two factors), 1.112 (three factors), and 1.006 (four factors). As shown in Figure 2, the Scree test indicated the acceptability of 1-4 factors as well.

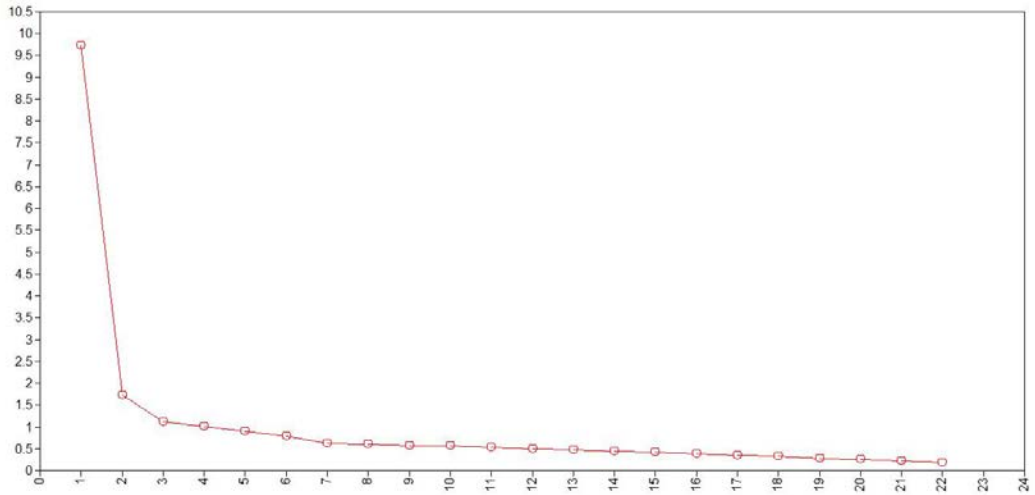


*Figure 2.* N = 755.

**Figure 2.** Screen Test Using Weighted Least Squares Estimation in Sample One

The model fit indices of the four models extracted from the EFA are presented in Table 2. As shown in Table 2, the one-factor model is the worst fitting model, and the two-factor model fits marginally, as indicated by the indices of CFI, TLI, RMSEA, and SRMR. However, based on the rule of $\chi^2$: *df* values of less than 3:1 suggesting good model fit (Klein et al., 1994), the two-factor model was not considered as a good fit. Although the four-factor model showed the best

fit according to all fit criteria, the three-factor model was not ruled out because all indices indicated a good fit as well. Because research on the construct of HP is new, and the HP construct has only been treated as unidimensional in the literature, the exploratory nature of the current study suggests retaining both the three-factor and the four-factor models to be tested in the second sample.

Table 2

*Fit Indices for Exploratory Factor Models of the HPC Measure in Sample One*

| HPC Factor | $\chi^2$ | *df* | CFI | TLI | RMSEA (90% CI) | SRMR |
|---|---|---|---|---|---|---|
| 1-Factor | 1485.62* | 209 | .892 | .881 | .090 (.086 - .094) | .073 |
| 2-Factor | 757.08* | 188 | .952 | .941 | .063 (.059 - .068) | .050 |
| 3-Factor | 538.14* | 168 | .969 | .957 | .054 (.049 - .059) | .040 |
| 4-Factor | 365.20* | 149 | .982 | .972 | .044 (.038 - .050) | .032 |

*Note.* HPC = Helicopter Parent Controlling; $\chi^2$ = chi square goodness of fit statistic; *df* = degrees of freedom; CFI = Comparative Fit Index; TLI = Tucker Lewis Index; RMSEA = Root Mean Square Error of Approximation; CI = confidence interval; SRMR = Standardized Root Mean Square Residual.
* Indicates $\chi^2$ is statistically significant ($p < .001$).

**Factor interpretations of three-factor model.** The rotated factor loading coefficients from geomin rotation for the three-factor model are presented in Table 3. Nine observed variables, including hpi7, hps4, hpi3, hps1, op4, op1, hps5, hps2, and hps3, achieved loadings above .40 on Factor 1, labeled as “Problem Solving”; eleven observed variables, including asb3, hpi5, asb6, op2, asb1, hpi1, hpi4, op3, asb2, hpi2, and hpi6, achieved loadings above .40 on Factor 2, labeled as “Precautionary Actions”, and finally two observed variables (asb5 and asb4) achieved loadings above .80 on Factor 3, labeled as “Physical Concerns”. As seen in Table 3, all 22 observed variables achieved loading above .40 on one factor. The highest loadings for all

three factors were: .94 (hpi7, on Problem Solving), .83 (asb3, on Precautionary Actions), and .82 (asb5, on Physical Concerns). The communality estimates ($h^2$) for each variable were ranged from .35 to .74 (Mdn = .511). There were no cross loading items.

Table 3

*Factor Loadings for Three Factor Model of Exploratory Factor Analysis with Geomin Rotation of HPC Measure*

| Observed Variable | Factor 1 Problem Solving | Factor 2 Precautionary Actions | Factor 3 Physical Concerns | Communality $h^2$ |
|---|---|---|---|---|
| hpi7 | **.937** | -.028 | -.245 | .678 |
| hps4 | **.895** | .001 | -.254 | .633 |
| hpi3 | **.714** | .080 | -.194 | .464 |
| hps1 | **.536** | .242 | -.020 | .487 |
| op4 | **.513** | .309 | .033 | .579 |
| op1 | **.481** | .253 | .081 | .510 |
| hps5 | **.475** | .075 | .115 | .353 |
| hps2 | **.474** | .220 | .051 | .439 |
| hps3 | **.428** | .251 | .025 | .394 |
| asb3 | -.060 | **.832** | -.036 | .608 |
| hpi5 | -.026 | **.800** | -.016 | .602 |
| asb6 | -.031 | **.606** | .139 | .450 |
| op2 | .170 | **.559** | .144 | .588 |
| asb1 | .007 | **.538** | .327 | .591 |
| hpi1 | .058 | **.535** | .135 | .431 |
| hpi4 | .254 | **.501** | -.096 | .401 |
| op3 | .336 | **.483** | .006 | .546 |
| asb2 | .338 | **.482** | -.167 | .426 |
| hpi2 | .287 | **.480** | .038 | .511 |
| hpi6 | .221 | **.438** | -.001 | .357 |
| asb5 | .011 | .058 | **.823** | .742 |
| asb4 | .029 | .004 | **.810** | .684 |

*Note.* Factor loadings > .40 are in boldface; HPC = Helicopter Parent Controlling; N = 755.

The correlation coefficients among the three factors are presented in Table 4. All correlation coefficients were statistically significant ($p < .001$), and ranged from .51 to .60, indicating positive and moderate correlations among Precautionary Actions, Problem Solving, and Physical Concerns. The reliability coefficients of omega for the three-factor model were as follows: .89 (Precautionary Actions), .88 (Problem Solving), and .90 (Physical Concerns). Using coefficient omega, instead of coefficient alpha, was because the omega information directly examined the common factor model, whereas coefficient alpha did not (McDonald, 1999). Coefficient omega is based on the parameters of the items in the factor model, and is the by-product of the factor analysis; whereas the Cronbach alpha is based on true-score equivalence model (e.g., all items fit a single-factor model with equal factor loadings) (McDonald).

Table 4

*Factor Correlations for Three-Factor Model of Exploratory Factor Analysis with Geomin Rotation of HPC Measure*

| HPC Factors | Factor 1 Problem Solving | Factor 2 Precautionary Actions | Factor 3 Physical Concerns |
|---|---|---|---|
| Factor 1 | - | | |
| Factor 2 | .603* | - | |
| Factor 3 | .514* | .536* | - |

*Note.* HPC = Helicopter Parent Controlling; N = 755; * $p < .001$.

**Factor interpretations of four-factor model.** The rotated factor loading coefficients from geomin rotation for the four-factor model are presented in Table 5. Using .40 as the cut-off point, 10 observed variables, including hpi4, hpi1, op3, hpi2, asb1, asb6, hps3, hps2, op2 and op1, achieved loadings above and equal .40 on the Factor 1, labeled as “Precautionary Actions”; three variables (hpi7, hps4, and hpi3) achieved loadings above .40 on the Factor 2, labeled as

Table 5

*Factor Loadings for Four- Factor Model of Exploratory Factor Analysis with Geomin Rotation of HPC Measure*

| Observed Variable | Factor 1 Precautionary Actions | Factor 2 Problem Solving | Factor 3 Physical Concerns | Factor 4 Whereabouts Concerns | Communality $h^2$ |
|---|---|---|---|---|---|
| hpi4 | **.796** | .028 | -.243 | -.009 | .495 |
| hpi1 | **.736** | -.132 | .000 | .037 | .485 |
| op3 | **.671** | .138 | -.063 | .052 | .579 |
| hpi2 | **.670** | .095 | -.035 | .041 | .544 |
| asb1 | **.631** | -.141 | .216 | .110 | .614 |
| asb6 | **.607** | -.166 | .017 | .196 | .472 |
| hps3 | **.573** | .232 | .005 | -.125 | .429 |
| hps2 | **.475** | .292 | .060 | -.068 | .451 |
| op2 | **.401** | .079 | .139 | .292 | .590 |
| op1 | **.398** | .330 | .121 | .012 | .515 |
| hps1 | .382 | .382 | .034 | .015 | .491 |
| hpi7 | -.034 | **.824** | -.005 | .072 | .697 |
| hps4 | .052 | **.759** | -.041 | .040 | .633 |
| hpi3 | .010 | **.621** | -.011 | .137 | .477 |
| op4 | .344 | .375 | .102 | .110 | .580 |
| hps5 | .330 | .334 | .161 | -.124 | .463 |
| asb4 | -.001 | .047 | **.819** | .027 | .714 |
| asb5 | .101 | .004 | **.788** | .021 | .739 |
| hpi5 | -.007 | .046 | .072 | **.789** | .705 |
| asb3 | .111 | -.013 | .017 | **.728** | .657 |
| asb2 | .207 | .270 | -.089 | .359 | .434 |
| hpi6 | .141 | .189 | .066 | .352 | .373 |

*Note.* Factor loadings > .40 are in boldface; HPC = Helicopter Parent Controlling; N = 755.

"Problem Solving"; two variables (asb5 and asb4) achieved loadings above .70 on the Factor 3, labeled as "Psychical Concerns", and two variables (hpi5 and asb3) achieved loadings above .70 on the last factor, labeled as "Whereabouts Concerns". Five items (hps1, op4, hps5, asb2, and

hpi6) were loaded below .40 on all factors, showing as weak indicators for the four- factor model. The highest loadings for all four factors were: .80 (hpi4 on Precautionary Actions), .82 (hpi7 on Problem Solving), .83 (asb4 on Physical Concerns), and .79 (hpi5 on Whereabouts Concerns). The communality estimates ($h^2$) for each item were ranged from .37 to .74 (Mdn = .488).

The correlation coefficients among the four factors are presented in Table 6. All correlation coefficients were statistically significant ($p < .001$), and were ranged from .26 to .67, indicating positively mild to moderate correlations among Precautionary Actions, Problem Solving, Physical Concerns, and Whereabouts Concerns. The omega coefficients of the reliability for the four factor model were .86 (Precautionary Actions), .84 (Problem Solving), .89 (Physical Concerns), and .85 (Whereabouts Concerns).

Table 6

*Factor Correlations for Four-Factor Model of Exploratory Factor Analysis with Geomin Rotation of HPC Measure*

| HPC Factor | Factor 1 Precautionary Actions | Factor 2 Problem Solving | Factor 3 Physical Concerns | Factor 4 Whereabouts Concerns |
|---|---|---|---|---|
| Factor 1 | - | | | |
| Factor 2 | .561* | - | | |
| Factor 3 | .546* | .258* | - | |
| Factor 4 | .686* | .402* | .460* | - |

*Note.* HPC = Helicopter Parent Controlling; * $p < .001$.

**Section summary.** The EFA findings in Sample One indicated that both three-factor and four-factor models had good data-model fitting. In addition, these two models shared three common factors (i.e., Precautionary Actions, Problem Solving, and Physical Concerns) because most observed variables/indicators which achieved high loadings on these factors were similar in

the two models. The two indicators on the fourth factor Whereabouts Concerns in the four-factor model were loaded heavily on Precautionary Actions in the first model, indicating the factors of Whereabouts Concerns and Precautionary Actions might be highly correlated once the models were specified in the confirmatory factor analysis (CFA). Both of the two models were then tested in Sample Two using the CFA.

**Research Findings of Confirmatory Factor Analyses in Sample Two**

All the confirmatory factor analyses (CFA) were performed with Mplus statistical program (7.4, Muthén & Muthén, 1998-2015) using robust weighted least squares estimation (WLSMV) due to the nature of the ordered categorical data. All analyses are based on N = 551 unless stated otherwise. For a factor analysis with 20 observed variables (two items were removed due to their lower factor loadings and lower communalities, see Chapter III for details), this sample size should be adequate based on some rules of thumb. Among the original total cases of 583, there were 32 (5.5%) of them including missing data. Most missing cases were dropped at some point; thus the missingness is not at random. Because the selection criteria specified the age range of the participants (i.e., 18-33 years), cases that could not be identified by age were removed. This was resulted a total of 551 cases with age identification. The descriptive statistics and the polychoric correlations for the 20 HPC observed variables are presented in Table E2 (Appendix E). The only pair of indicators that were not statistically correlated is hpi3 and asb6. All other correlations were statistically significant ($p < .05$).

**Three-factor solution.** Based on the EFA results in Sample One, both three-factor and four-factor models were tested using CFA in Sample Two. For the three-factor model, it was specified which nine observed variables were loaded onto the latent variable of Problem Solving; nine observed variables were loaded onto the latent variable of Precautionary Actions, and the

other two observed variables were loaded onto the latent variable of Physical Concerns. Figure 3 depicts the complete specification of the three-factor model. The observed variables, hpi7, asb3, and asb5, were used as marker indicators for Problem Solving, Precautionary Actions, and Physical Concerns, respectively. The model contained no double-loading indicators and all measurement errors were presumed to be uncorrelated. The latent factors of Problem Solving, Precautionary Actions, and Physical Concerns were permitted to be correlated due to the assumption that they were all under the umbrella of parental controlling practices. The evidence of the moderate relationships between these dimensions from the previous EFA results further indicated their correlated relationship. The model was over-identified with 167 *df*.

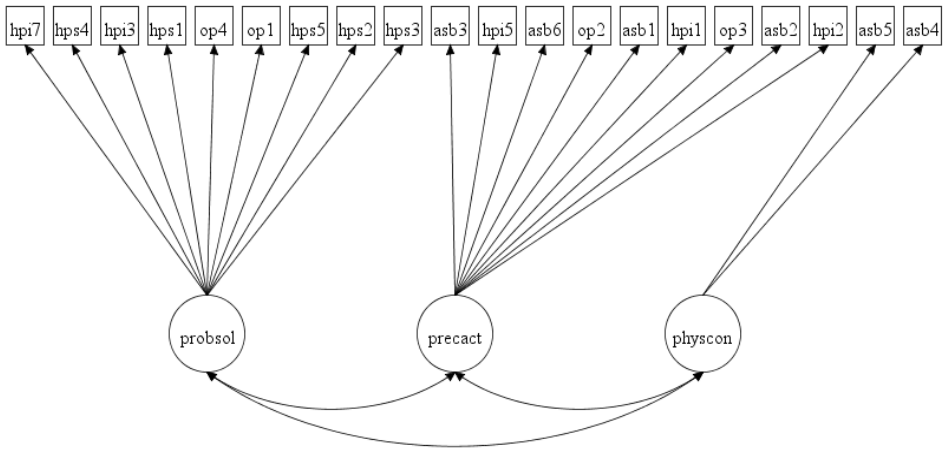


*Figure 3.* The error variances are not shown on the figure. HPC = Helicopter Parent Controlling; probsol = Problem Solving; precact = Precautionary Actions; physcon = Physical Concerns; hps = Helicopter Parenting Scale; asb = Helicopter Parenting and Autonomy Supportive Behaviors; hpi = Helicopter Parenting Instrument; op = Overparenting; N = 551

**Figure 3**. Hypothesized Initial Three-Factor Model of Confirmatory Factor Analysis for HPC Measure in Sample Two

Using Sample Two's variance-covariance matrix of the 20 HPC observed variables, and multiple indices (e.g., $\chi^2$: *df* , RMSEA, RMSEA 90% CI, CFI, and TLI, as discussed in the EFA section), it was suggested that the initial three-factor model marginally fit the data ($\chi^2$ = 668.43, *df* = 103, RMSEA = .074, RMSEA 90% CI = .068 - .080, CFI = .929, and TLI = .919). The unstandardized and standardized parameter estimates, standard errors, and communalities are presented in Table 7. The specified indicators of the latent variable of Problem Solving were loaded above .45 (standardized), and there were a few indicators that had communalities lower than .30, indicating a weak effect size. For the specified indicators of the latent variable of Precautionary Actions, all loadings were achieved above .55, and only a couple of them had communalities lower than .40. In contrast, all the factor loadings and communalities were high for the two indicators that were specified on the latent factor of Physical Concerns.

Table 7

*Unstandardized and Standardized Factor Loadings and Communalities for the Initial Three-Factor Model of Confirmatory Factory Analysis for HPC Measure in Sample Two*

| | Problem Solving | | | | Precautionary Actions | | | | Physical Concerns | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Variable | | | STD | STD | | | STD | STD | | | STD | STD | $h^2$ |
| | Estimate | SE | Estimate | SE | Estimate | SE | Estimate | SE | Estimate | SE | Estimate | SE | |
| hpi7 | 1.000 | .000 | .494 | .037 | | | | | | | | | .244 |
| hps4 | 1.268 | .096 | .626 | .030 | | | | | | | | | .392 |
| hpi3 | .915 | .085 | .452 | .038 | | | | | | | | | .204 |
| hps1 | 1.661 | .133 | .820 | .027 | | | | | | | | | .672 |
| op4 | 1.644 | .127 | .812 | .024 | | | | | | | | | .659 |
| op1 | 1.506 | .119 | .743 | .027 | | | | | | | | | .553 |
| hps5 | 1.091 | .109 | .539 | .042 | | | | | | | | | .290 |
| hps2 | 1.475 | .129 | .728 | .040 | | | | | | | | | .530 |
| hps3 | 1.433 | .123 | .708 | .037 | | | | | | | | | .501 |
| asb3 | | | | | 1.000 | .000 | .709 | .024 | | | | | .502 |
| hpi5 | | | | | .983 | .045 | .695 | .029 | | | | | .485 |
| asb6 | | | | | .867 | .061 | .615 | .040 | | | | | .378 |
| op2 | | | | | 1.069 | .046 | .757 | .024 | | | | | .574 |
| asb1 | | | | | 1.163 | .051 | .824 | .028 | | | | | .680 |
| hpi1 | | | | | .885 | .050 | .627 | .031 | | | | | .393 |
| op3 | | | | | .806 | .050 | .571 | .033 | | | | | .326 |
| asb2 | | | | | .781 | .052 | .553 | .034 | | | | | .306 |
| hpi2 | | | | | 1.036 | .045 | .734 | .026 | | | | | .539 |
| asb5 | | | | | | | | | 1.000 | .000 | .874 | .044 | .764 |
| asb4 | | | | | | | | | .904 | .084 | .791 | .044 | .625 |

*Note.* HPC = Helicopter Parent Controlling; STD = Standardized; $h^2$ = Communality; hps = Helicopter Parenting Scale; asb = Helicopter Parenting and Autonomy Supportive Behaviors; hpi = Helicopter Parenting Instrument; op = Overparenting; N = 551.

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The standardized factor correlations for the initial three-factor model are presented in Table 8. Different from the EFA in which the observed variables are allowed to load on all latent factors, the observed variables of the CFA are only allowed to load on one latent factor; therefore, the correlations between factors from the CFA indicate more accurately the factor

relationship. As shown in Table 8, Problem Solving and Precautionary Actions are highly correlated (.889). It is apparent that the initial three-factor model needs some re-specification to achieve better model fit and appropriate factor correlations.

Table 8

*Factor Correlations for the Initial Three-Factor Model of Confirmatory Factor Analysis for HPC Measure in Sample Two*

| HPC Factor | Factor 1 Problem Solving | Factor 2 Precautionary Actions | Factor 3 Physical Concerns |
|---|---|---|---|
| Factor 1 | - | | |
| Factor 2 | .889* | - | |
| Factor 3 | .578* | .613* | - |

*Note.* HPC = Helicopter Parent Controlling; N = 551; * $p < .001$.

Because Mplus (7.4) does not provide standardized residuals when using the robust weighted least squares estimation, modification indices were used to identify focal areas of misfit in a CFA solution. The modification index "reflects an *approximation* of how much the overall model $\chi^2$ would decrease if the fixed or constrained parameter was freely estimated" (Brown, 2006, p. 119). In general, a good-fitting model should produce modification indices that are small in magnitude. It is important to note that model re-specifications should be justified on the basis of prior research or theory, and modification indices should not be used solely on improving model fit (Brown).

Based on the EFA results from Sample One, as well as the modification indices from the initial three-factor model of the CFA in Sample Two, there were several trials made to re-specify the initial three-factor model to fit better the sample data. Figure 4 depicts the final three-factor

model that has good fitting ($\chi^2$ = 102.048, *df* = 41, RMSEA = .052, RMSEA 90% CI = .039 - .065, CFI = .980, and TLI =.974). As shown in Figure 4, the standardized correlation coefficients

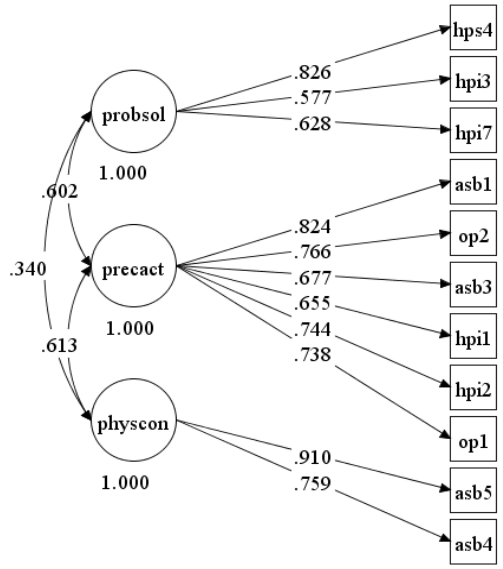



*Figure 4.* The error variances are not shown on the figure. HPC = Helicopter Parent Controlling; probsol = Problem Solving; precact = Precautionary Actions; physcon = Physical Concerns; hps = Helicopter Parenting Scale; asb = Helicopter Parenting and Autonomy Supportive Behaviors; hpi = Helicopter parenting Instrument; op = Overparenting; N = 551.

**Figure 4.** Re-specified Final Three-Factor Model of Confirmatory Factor Analysis with Standardized Loadings and Correlation Coefficients for the HPC Measure

among the three latent variables (.340, .603, and .613) indicated mild to moderate correlations. Comparing with the initial three-factor model, the indicators for the latent variable of Problem Solving were reduced from the initial nine to current three (hps4, hpi3, and hpi7). The indicator of op1, which was specified on Problem Solving in the initial model, fit better on Precautionary Actions based upon the inspection of modification indices. For the final three-factor model, indicators that specified the latent variable Precautionary Actions included asb1, abs3, op1, op2,

hpi1, and hpi2. As for the factor of Psychical Concerns, the two indicators (asb5 and asb4) remained same as in the initial model. The final three-factor model was over-identified with 41 *df*. Table 9 presents the detailed unstandardized and standardized factor loadings, standard errors, and communalities for the final three-factor model. All factor loadings were achieved above .55, and only two indicators had communalities below .40.

Table 9

*Unstandardized and Standardized Factor Loadings and Communalities for the Final Three-Factor Model of Confirmatory Factory Analysis for HPC Measure in Sample Two*

| | Problem Solving | | | | Precautionary Actions | | | | Physical Concerns | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| variable | Estimate | SE | STD Estimate | STD SE | Estimate | SE | STD Estimate | STD SE | Estimate | SE | STD Estimate | STD SE | $h^2$ |
| hps4 | 1.000 | .000 | .826 | .042 | | | | | | | | | .682 |
| hpi3 | .699 | .071 | .577 | .042 | | | | | | | | | .333 |
| hpi7 | .761 | .067 | .628 | .039 | | | | | | | | | .395 |
| asb1 | | | | | 1.000 | .000 | .824 | .029 | | | | | .679 |
| op2 | | | | | .929 | .040 | .766 | .025 | | | | | .587 |
| asb3 | | | | | .822 | .041 | .677 | .028 | | | | | .459 |
| hpi1 | | | | | .795 | .046 | .655 | .032 | | | | | .429 |
| hpi2 | | | | | .903 | .040 | .744 | .026 | | | | | .554 |
| op1 | | | | | .896 | .044 | .738 | .029 | | | | | .545 |
| asb5 | | | | | | | | | 1.000 | .000 | .910 | .046 | .828 |
| asb4 | | | | | | | | | .834 | .084 | .759 | .046 | .577 |

*Note.* HPC = Helicopter Parent Controlling; STD = Standardized; $h^2$ = Communality; hps = Helicopter Parenting Scale; asb = Helicopter Parenting and Autonomy Supportive Behaviors; hpi = Helicopter Parenting Instrument; op = Overparenting; N = 551.

The reliability coefficient, omega, was calculated. The omega coefficients were .77 for the Problem Solving, .84 for the Precautionary Actions, and .87 for the Physical Concerns. These omega coefficients indicate the final three-factor model (see Appendix D-III for the indicators) has a good reliability to measure the construct of HPC.

**Four-factor solution.** The hypothesized four-factor model was also tested using CFA in Sample Two. Based on the EFA results from Sample One, for the four-factor model, it was specified which three observed variables were loaded onto Problem Solving; nine observed variables were loaded onto Precautionary Actions; two observed variables were loaded onto Physical Concerns, and two observed variables were loaded onto Whereabouts Concerns. Figure 5 depicts the complete specification of the initial four-factor model of CFA. The observed variables, hpi7, hpi1, asb4, and hpi5, were used as marker indicators for the four latent variables,

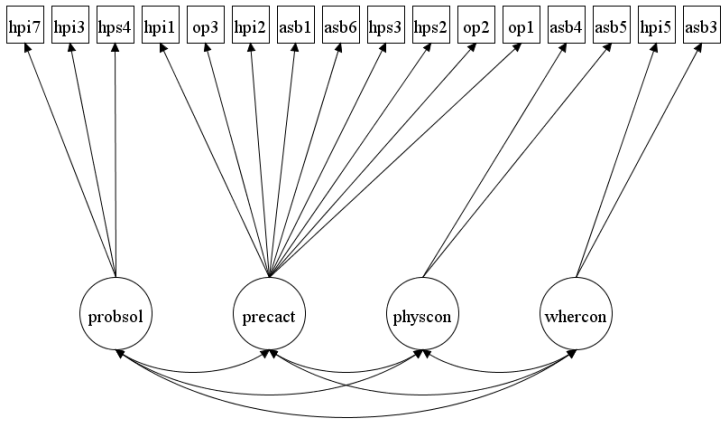



*Figure 5.* The error variances are not shown on the figure. HPC = Helicopter Parent Controlling; probsol = Problem Solving; precact = Precautionary Actions; physcon = Physical Concerns; whercon = Whereabouts Concerns; hps = Helicopter Parenting Scale; asb = Helicopter Parenting and Autonomy Supportive Behaviors; hpi = Helicopter Parenting Instrument; op = Overparenting; N = 551.

**Figure 5.** Hypothesized Initial Four-Factor Model of Confirmatory Factor Analysis for HPC Measure in Sample Two

respectively. The model contained no double-loading indicators and all measurement errors were presumed to be uncorrelated. In addition, the four latent factors were permitted to be correlated. The model was over-identified with 98 *df*.

Using Sample Two's variance-covariance matrix of the 16 HPC observed variables, and multiple fit indices (e.g., $\chi^2$: *df* , RMSEA, CFI, and TLE), the initial four-factor model reasonably fit the data ($\chi^2$ = 332.873, *df* = 98, RMSEA = .066, RMSEA 90% CI = .058 - .074, CFI = .955, and TLI = .944). As shown in Table 10, the standardized factor correlation coefficient for Precautionary Actions and Whereabouts Concerns was high (.83), although other coefficients indicated moderate correlations. The unstandardized and standardized parameter estimates, standard errors, and communalities are presented in Table 11. All the standardized factor loadings were above .55, and only three indicators' communalities were below .40. Because of the high correlation coefficient between Precautionary Actions and Whereabouts Concerns, the initial four-factor model was re-specified to achieve better model fit and factor correlations.

Table 10

*Factor Correlations for the Initial Four-Factor Model of Confirmatory Factor Analysis for HPC Measure in Sample Two*

| HPC Factor | Factor 1 Problem Solving | Factor 2 Precautionary Actions | Factor 3 Physical Concerns | Factor 4 Whereabouts Concerns |
|---|---|---|---|---|
| Factor 1 | - | | | |
| Factor 2 | .657* | - | | |
| Factor 3 | .349* | .632* | - | |
| Factor 4 | .531* | .828* | .542* | - |

*Note.* HPC = Helicopter Parent Controlling; N = 551; * $p < .001$.

Several trials were made to re-specify the initial four-factor model, based on the EFA results from Sample One, and the modification indices derived from the initial four-factor model's CFA solution in Sample Two. Figure 6 depicts the final four-factor model that fits data

well ($\chi^2$ = 142.946, *df* = 59, RMSEA = .051, RMSEA 90% CI = .040 - .061, CFI = .977, and TLI =.970). As shown in Figure 6, the standardized correlation coefficients for the four latent variables (.347, .531, .540, 604, .648, and .803) are moderate, and the correlation between Precautionary Actions and Whereabouts Concern is .80, which is in the acceptable range.

Table 11

*Unstandardized and Standardized Factor Loadings and Communalities for the Initial Four-Factor Model of Confirmatory Factory Analysis for HPC Measure in Sample Two*

| | Problem Solving | | | | Precautionary Actions | | | | Physical Concerns | | | | Whereabouts Concerns | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vari-able | Estimate | SE | STD Estimate | STD SE | Estimate | SE | STD Estimate | STD SE | Estimate | SE | STD Estimate | STD SE | Estimate | SE | STD Estimate | STD SE | $h^2$ |
| hpi7 | 1.000 | .000 | .649 | .037 | | | | | | | | | | | | | .421 |
| hpi3 | .884 | .076 | .574 | .041 | | | | | | | | | | | | | .329 |
| hps4 | 1.259 | .100 | .817 | .039 | | | | | | | | | | | | | .667 |
| hpi1 | | | | | 1.000 | .000 | .629 | .031 | | | | | | | | | .396 |
| op3 | | | | | .888 | .064 | .559 | .034 | | | | | | | | | .313 |
| hpi2 | | | | | 1.180 | .064 | .743 | .025 | | | | | | | | | .551 |
| asb1 | | | | | 1.324 | .064 | .834 | .027 | | | | | | | | | .695 |
| asb6 | | | | | .950 | .076 | .598 | .041 | | | | | | | | | .357 |
| hps3 | | | | | 1.075 | .081 | .677 | .037 | | | | | | | | | .458 |
| hps2 | | | | | 1.100 | .082 | .692 | .040 | | | | | | | | | .479 |
| op2 | | | | | 1.178 | .063 | .742 | .025 | | | | | | | | | .550 |
| op1 | | | | | 1.162 | .070 | .731 | .028 | | | | | | | | | .535 |
| asb4 | | | | | | | | | 1.000 | .000 | .784 | .043 | | | | | .614 |
| asb5 | | | | | | | | | 1.129 | .103 | .885 | .042 | | | | | .784 |
| hpi5 | | | | | | | | | | | | | 1.000 | .000 | .787 | .043 | .620 |
| asb3 | | | | | | | | | | | | | 1.027 | .051 | .885 | .042 | .654 |

*Note*. HPC = Helicopter Parent Controlling; STD = Standardized; $h^2$ = Communality; hps = Helicopter Parenting Scale; asb = Helicopter Parenting and Autonomy Supportive Behaviors; hpi = Helicopter Parenting Instrument; op = Overparenting; N = 551.

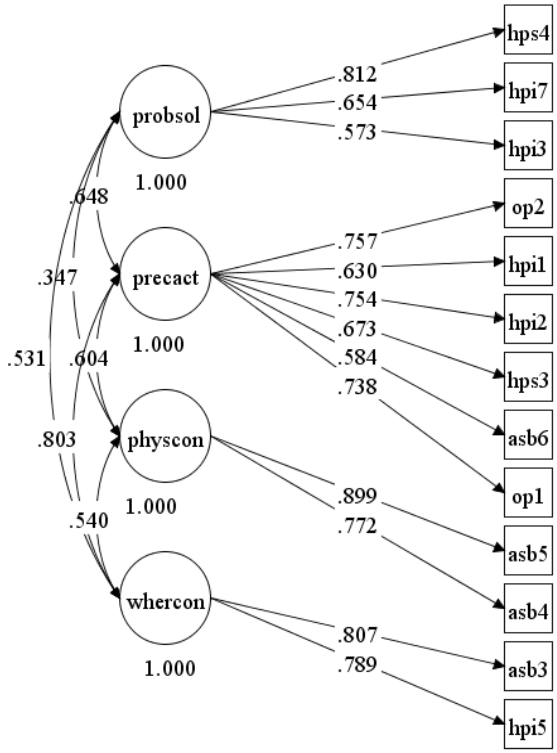



*Figure 6.* The error variances are not shown on the figure. HPC = Helicopter Parent Controlling; probsol = Problem Solving; precact = Precautionary Actions; physcon = Physical Concerns; whercon = Whereabouts Concerns; hps = Helicopter Parenting Scale; asb = Helicopter Parenting and Autonomy Supportive Behaviors; hpi = Helicopter Parenting Instrument; op = Overparenting; N = 551.

**Figure 6.** Re-specified Final Four-Factor Model of Confirmatory Factor Analysis with Standardized Loadings and Correlation Coefficients for the HPC Measure

Comparing with the initial four-factor model, the number of indicators for the latent variable Precautionary Actions in the final four-factor model were reduced to six, including hpi1, hpi2, op1, op2, hps3, and asb6. The indicators for other three factors remained the same. The final four-factor model was over-identified with 59 *df*. Table 12 presents the detailed unstandardized and standardized factor loadings, standard errors, and communalities for the final four-factor model (see Appendix D-IV for the indicators). For this model, the omega coefficients

were .75 (Problem Solving), .78 (Precautionary Actions), .87 (Physical Concerns), and .78 (Whereabouts Concerns). These coefficients are reasonably adequate, indicating the final four-factor is reliable to be used to measure the construct of HPC.

**Session summary.** In Phase Two of the study, both the three-factor and four-factor models, derived from the EFA in Sample One, were further validated using CFA in Sample Two. Although the initial two models had reasonably adequate overall goodness-of-fit, the modification indices identified some focal areas of misfit in the CFA solutions. After model re-specifications, both models achieved better overall fits and factor correlations. The reliability coefficients of omegas further indicated the two final models were reliable to be used to measure the HPC construct. Because of the cleaner solution of the three-factor model, as evidenced by the lack of cross-loadings in EFA, as well as favoring parsimony, the final three-factor model was used as the measurement model in the structural equational models (SEM) in this study.

Table 12

*Unstandardized and Standardized Factor Loadings and Communalities for the Final Four-Factor Model of Confirmatory Factory Analysis for the HPC Measure in Sample Two*

| | Problem Solving | | | | Precautionary Actions | | | | Physical Concerns | | | | Whereabouts Concerns | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vari-able | Estimate | SE | STD Estimate | STD SE | Estimate | SE | STD Estimate | STD SE | Estimate | SE | STD Estimate | STD SE | Estimate | SE | STD Estimate | STD SE | $h^2$ |
| hps4 | 1.000 | .000 | .812 | .039 | | | | | | | | | | | | | .660 |
| hpi7 | .805 | .065 | .654 | .037 | | | | | | | | | | | | | .428 |
| hpi3 | .705 | .068 | .573 | .041 | | | | | | | | | | | | | .328 |
| op2 | | | | | 1.000 | .000 | .757 | .027 | | | | | | | | | .573 |
| hpi1 | | | | | .833 | .047 | .630 | .032 | | | | | | | | | .397 |
| hpi2 | | | | | .997 | .044 | .754 | .026 | | | | | | | | | .569 |
| hps3 | | | | | .890 | .059 | .673 | .040 | | | | | | | | | .453 |
| asb6 | | | | | .772 | .061 | .584 | .043 | | | | | | | | | .341 |
| op1 | | | | | .975 | .047 | .738 | .029 | | | | | | | | | .545 |
| asb5 | | | | | | | | | 1.000 | .000 | .899 | .046 | | | | | .808 |
| asb4 | | | | | | | | | .859 | .084 | .772 | .045 | | | | | .596 |
| asb3 | | | | | | | | | | | | | 1.000 | .000 | .807 | .026 | .651 |
| hpi5 | | | | | | | | | | | | | .977 | .053 | .789 | .030 | .622 |

*Note.* HPC = Helicopter Parent Controlling; STD = Standardized; $h^2$ = Communality; hps = Helicopter Parenting Scale; asb = Helicopter Parenting and Autonomy Supportive Behaviors; hpi = Helicopter Parenting Instrument; op = Overparenting; N = 551.

**Research Findings of the Structural Equation Modelling in Sample Two**

To answer the second and the third research questions (RQ2 and RQ3), structural equation modelling (SEM) analyses in Mplus (7.4, Muthén & Muthén, 1998-2015) were used with robust weighted least squares estimation unless stated otherwise. All analyses were based on N = 551. The three-factor solution of the HPC measure was used in the SEM analyses. SEM models consist of two levels: measurement and structural. A *measurement model* is a set of relations among indicator variables and the latent construct they represent, which is also known as a confirmatory factor analysis model; and a *structural model* is constructed by the relationships among the latent constructs (Kline, 2005). Working within an SEM framework has distinct advantages because the measurement errors can be disattenuated when using latent constructs, rather than measured variables, to estimate the structural relationships (Muthén, 2002).

**Findings for RQ2.** The RQ2 of this study is "What is the relationship between HPC and college students' perceived stress?" To answer this question, the measurement model that included the HPC and the perceived stress measures was first investigated for its adequacy for the structural models; then the path coefficients and the effect sizes were estimated to assess the relationships between the factors of HPC and perceived stress. For the latent constructs in the SEM models, the HPC construct consisted of three continuous latent variables (Problem Solving, Precautionary Actions, and Physical Concerns), which were specified by 11 observed variables; the stress construct, using the Perceived Stress Scale – 10-Item Short Form (Cohen, Kamarck, & Mermelstein, 1983; Cohen & Williamson, 1988), consisted of 10 observed variables. All observed variables were ordered categorical by nature. According to Kline's (2005) recommendation of 20:1 as the ratio of the number of cases to the number of free parameters, the

sample size (N = 551) in this study was adequate for the SEM analyses. Figure 7 depicts the basic hypothesized path diagram for the model.

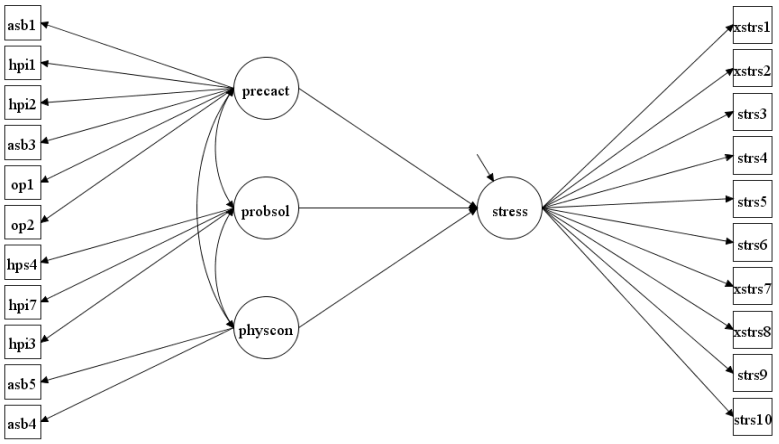



*Figure 7.* HPC = Helicopter Parent Controlling; probsol = Problem Solving; precact = Precautionary Actions; physcon = Physical oncerns; hps = Helicopter Parenting Scale; asb = Helicopter Parenting and Autonomy Supportive Behaviors; hpi = Helicopter Parenting Instrument; op = Overparenting; xstr = reverse coded Perceived Stress Scale; str= Perceived Stress Scale; N = 551.

**Figure 7.** Hypothesized Path Diagram between the Constructs of HPC and Stress

***Measurement models constituting HPC and stress.*** The descriptive statistics and bivariate correlations for each variable are given in Table E3 (Appendix E). Because the dimensional structure of the HPC had been examined using factor analyses, the extent to which the stress construct formed a unidimensional representation was examined first by using CFA. Although the initial model that included all 10 stress indicators formed a unidimensional latent factor, which satisfied the acceptable model fitting ($\chi^2$ = 519.456, *df* = 183, RMSEA = .058, RMSEA 90% CI = .052 - .064, CFI = .96, and TLI =.954), the examination of the modification indices revealed that the model could fit the data better when the stress indicators were specified as two latent variables ($\chi^2$ = 375, *df* = 179, RMSEA = .045; RMSEA 90% CI = .038 - .051, CFI

= .977, and TLI =.973). The four reverse coded stress indicators were specified on the first latent variable, labeled as "Controllable Stress", and the remaining six items were specified on the second latent variable, labeled as "Uncontrollable Stress" (see Chapter III for the details of the stress measure). All indicator variables were related significantly to their respective latent constructs. The correlation coefficients between the latent variables are presented in Table 13.

Table 13

*Factor Correlations for the Measurement Model Constituting HPC and Stress for Structural Equation Modeling in Sample Two*

| Latent Variable | L1 Precautionary Actions | L2 Problem Solving | L3 Physical Concerns | L4 Controllable Stress | L5 Uncontrollable Stress |
|---|---|---|---|---|---|
| L1 | - | | | | |
| L2 | .601* | - | | | |
| L3 | .607* | .336* | - | | |
| L4 | .341* | .259* | .219* | - | |
| L5 | .291* | .326* | .192* | .788* | - |

*Note*. HPC = Helicopter Parent Controlling; N = 551; * $p < .001$.

***Structural models constituting HPC and stress.*** An initial model was specified in which each HPC factor predicted Controllable Stress and Uncontrollable Stress. This initial model had goodness-of-fit ($\chi^2 = 375$, $df = 179$, RMSEA = .045, RMSEA 90% CI = .038 - .051, CFI = .977, and TLI =.973). As depicted in Figure 8, two paths were significant. One is from Precautionary Actions to Controllable Stress (path coefficient = .275, $p < .01$), and the other is from Problem Solving to Uncontrollable Stress (path coefficient = .239, $p < .01$). The model accounted for 12% of the variance in Controllable Stress, and 12% of the variance in Uncontrollable Stress.

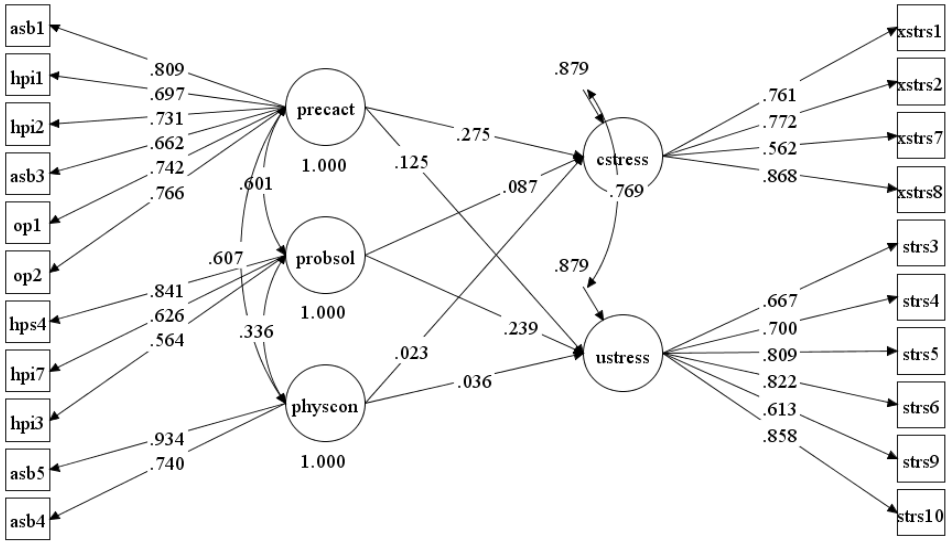



*Figure 8.* The error variances of the observed variables are not shown on the figure. HPC = Helicopter Parent Controlling; probsol = Problem Solving; precact = Precautionary Actions; physcon = Physical Concerns; cstress = Controllable Stress; ustress = Uncontrollable Stress; hps = Helicopter Parenting Scale; asb = Helicopter Parenting and Autonomy Supportive Behaviors; hpi = Helicopter Parenting Instrument; op = Overparenting; xstr = reverse coded Perceived Stress Scale; str= Perceived Stress Scale; N = 551.

**Figure 8.** Standardized Initial Structural Model Constituting HPC and Stress Constructs in Sample Two

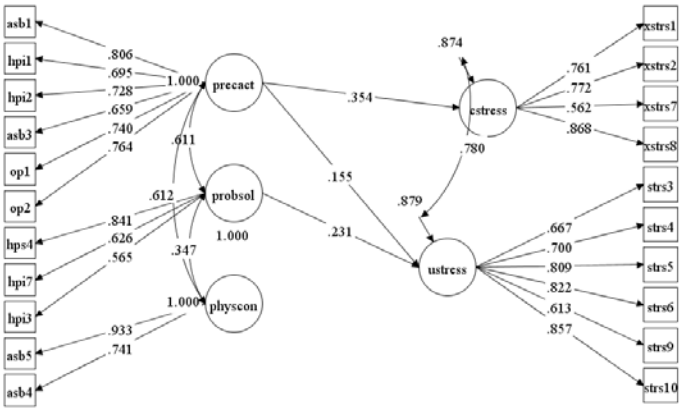
Three nested models were used to test the extent to which precautionary actions and problem solving predicted perceived stress. The first nested model (Model A) in which the paths were from Precautionary Actions to both Controllable Stress and Uncontrollable Stress, and from Problem Solving to Uncontrollable Stress, had a good model fit ($\chi^2 = 357$, $df = 182$, RMSEA = .042, RMSEA 90% CI = .035 - .048, CFI = .979, and TLI = .976). All paths were significant, as depicted in Figure 9: Model A. The model accounted for 13% of the variance in Controllable Stress, and 12% of the variance in Uncontrollable Stress.

The second nested model (Model B) in which the paths were only from Precautionary Actions to Controllable Stress, and from Problem Solving to Uncontrollable Stress, also had a

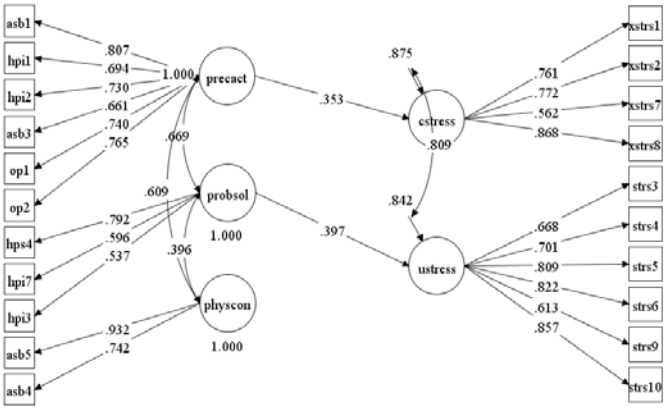
good model fit ($\chi^2$ = 364, *df* = 183, RMSEA = .042, RMSEA 90% CI = .036 - .049, CFI = .978, and TLI = .975). All paths were significant, as depicted in Figure 9: Model B. The model accounted for 13% of the variance in Controllable Stress and 16% of the variance in Uncontrollable Stress. When the latent variable of Precautionary Actions is increased by one, the Controllable Stress is expected to increase by .35 holding the variable of Problem Solving constant. Likewise, when the latent variable of Problem Solving is increased by one, the Uncontrollable Stress is expected to increase by .40, while holding the variable of Precautionary Actions constant.

The third nested model (Model C) in which an interactive effect between Precautionary Actions and Problems Solving was added to the model, was used to test whether the interaction predicted the perceived stress. For this analysis, the robust maximum likelihood estimation was used, and the Monte Carlo (1000) approach was applied. The histograms indicated the dependent variables, both Controllable Stress and Uncontrollable Stress were within the acceptable normal distribution ranges (skewness was .158 and .172, respectively; Kurtosis was .035 and -.147, respectively). The normality for the independent variables, the three HPC latent variables, was also acceptable (skewness and kurtosis were between -1.0 and 1.0). The scatter plots between the independent and dependent variables indicated the linearity and homoscedasticity. As depicted in Figure 9: Model C, the path from the interactive effect of Precautionary Actions and Problems Solving was not significant.

Model A:




Model B:




Model C:

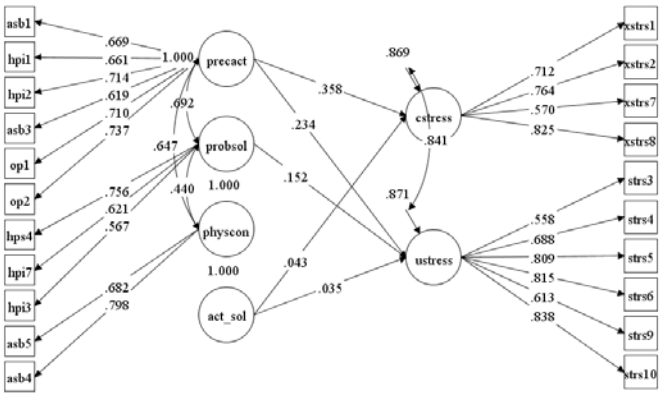



*Figure 9.* The error variances of the observed variables are not shown on the figure. HPC = Helicopter Parent Controlling; probsol = Problem Solving; precact = Precautionary Actions; physcon = Physical Concerns; act_sol = interaction between precact and probsol; cstress = Controllable Stress; ustress = Uncontrollable Stress; hps = Helicopter Parenting Scale; asb = Helicopter Parenting and Autonomy Supportive Behaviors; hpi = Helicopter parenting Instrument; op = Overparenting; xstr = reverse coded Perceived Stress Scale; str= Perceived Stress Scale.

**Figure 9.** Three Standardized Nested Structural Models Constituting HPC and Stress Constructs in Sample Two

***Section summary.*** In order to understand the relationship between the HPC practices and college students' perceived stress, the SEM analyses were performed using only the latent variables. The predictive relationships were found between helicopter parents' precautionary actions and perceived stress, as well as between helicopter parents' problem solving and perceived stress. However, the effect sizes for the predictions were not strong. Meanwhile, helicopter parents' physical concerns were not significantly associated with college students' perceived stress.

**Findings for RQ3.** The RQ3 in this study was "How do the effects of HPC practices on college students' perceived stress differ when accounting for parental acceptance/warmth (AW)?" To answer this question, the initial measurement model was first examined. The model consisted of three latent constructs and their measures: HPC, AW, and perceived stress. Using the three-factor solution, the HPC construct was measured by three latent variables, and they are Precautionary Actions, Problem Solving, and Physical Concerns. Because the observed variables of the stress construct had been factored in another measurement model, and the two-factor structure fit the data better than its initial one-factor structure, in the current model, the construct of stress was measured by two latent variables, and they are Controllable Stress and Uncontrollable Stress. As for the construct of AW, the initial one-factor structure was used, and the AW factor was measured by nine observed indicators.

***Measurement models constituting HPC, AW, and stress.*** The test of the measurement model indicated a reasonably acceptable fit ($\chi^2$ = 1163, *df* = 390, RMSEA = .060, RMSEA 90% CI = .056 - .064, CFI = .957, and TLI = .952). However, the modification indices showed that a couple of AW observed variables did not fit the data well. After a few trials, three AW variables were removed for better model fitting ($\chi^2$ = 647.208, *df* = 309, RMSEA = .045, RMSEA 90% CI

= .040 - .049, CFI = .978, and TLI = .975). The summary of the descriptive statistics and bivariate correlations for all observed variables in the measurement model are presented in Table E4 (Appendix E). The standardized correlation coefficients for all the latent variables used in the model are presented in Table 14. As shown in Table 14, Problem Solving was positively correlated with parental AW on a moderate level, and Precautionary Actions is negatively correlated with parental AW on a mild level. As for the last factor of the HPC, Physical Concerns, no significant correlation was found with AW at all.

Table 14

*Factor Correlations for the Measurement Model Constituting HPC, Parental AW, and Stress for Structural Equation Modeling in Sample Two*

| Latent Variable | L1 Precautionary Actions | L2 Problem Solving | L3 Physical Concerns | L4 Parental Acceptance /Warmth | L5 Controllable Stress | L6 Uncontrollable Stress |
|---|---|---|---|---|---|---|
| **L1** | - | | | | | |
| **L2** | .602** | - | | | | |
| **L3** | .605** | .338** | - | | | |
| **L4** | -.163* | .446** | -.059 | - | | |
| **L5** | .342** | .258** | .219** | -.258** | - | |
| **L6** | .291** | .325** | .192** | -.043 | .789** | - |

*Note.* HPC = Helicopter Parent Controlling; N = 551; ** $p < .001$; * $p < .01$.

***Structural models constituting HPC, AW, and stress.*** The basic structural model, constituting HPC, AW, and stress, was first tested. The latent variables of HPC and AW were the predictive variables, and the latent variables of stress were the criterion variables. As depicted in Figure 10, significant paths were found from Problem Solving to both Controllable Stress and Uncontrollable Stress (path coefficient = .508, $p < .001$ and path coefficient = .451, $p < .001$,

respectively), and from AW to both Controllable Stress and Uncontrollable Stress (path coefficient = -.495, $p < .001$ and path coefficient = -.250, $p < .01$, respectively). For the latent variables of Precautionary Actions and Physical Concerns, the path coefficients were all below |.10| (ns). By adding the new factor of AW, the effects of Precautionary Actions on stress factors were cancelled out. The parental variables accounted for 24% of the variance in college students' perceived controllable stress and 15% of the variance in college students' perceived uncontrollable stress.

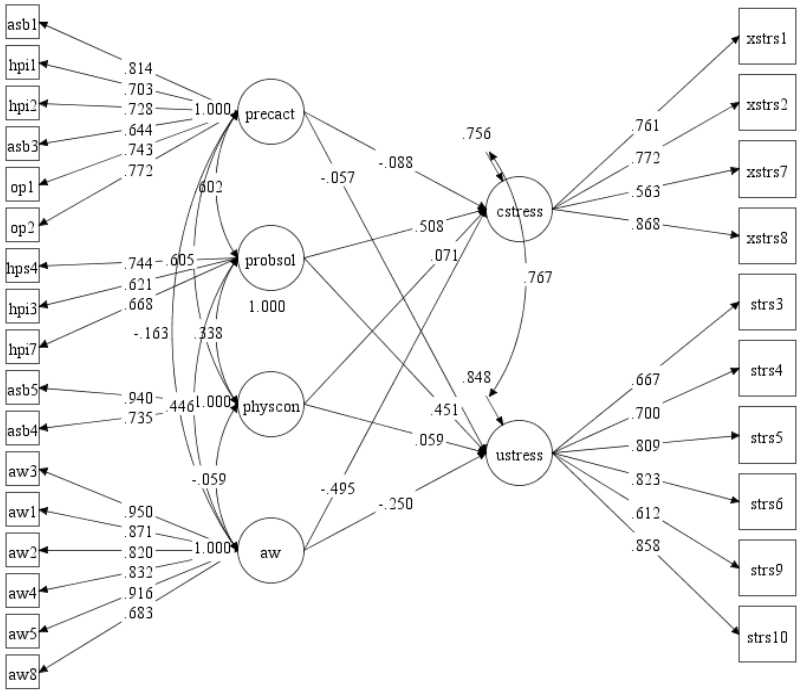


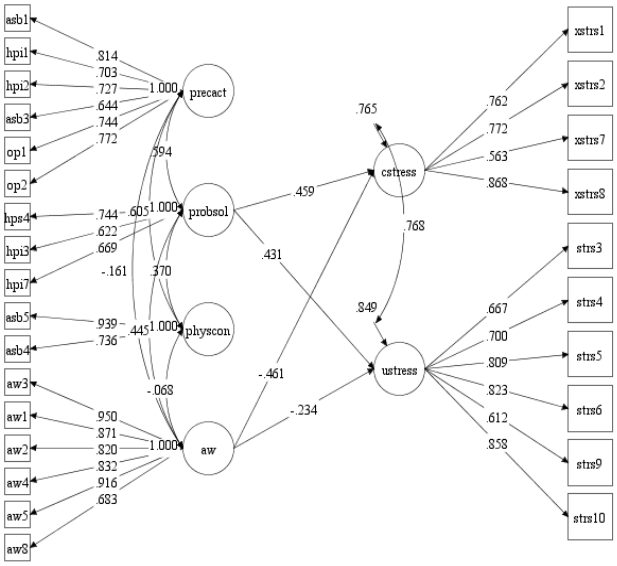

*Figure 10.* The error variances of the observed variables are not shown on the figure. HPC = Helicopter Parent Controlling; AW = parental Acceptance/Warmth; probsol = Problem Solving; precact = Precautionary Actions; physcon = Physical Concerns; cstress = Controllable Stress; ustress = Uncontrollable Stress; hps = Helicopter Parenting Scale; asb = Helicopter Parenting and Autonomy Supportive Behaviors; hpi = Helicopter Parenting Instrument; op = Overparenting; xstr = reverse coded Perceived Stress Scale; str= Perceived Stress Scale; N = 551.

**Figure 10.** Standardized Initial Structural Model Constituting HPC, AW, and Stress Constructs in Sample Two

A nested model was tested using two estimators. Model A, using robust weighted least squares estimation (WLSMV), was investigated to test the effects of Problem Solving and AW on stress by removing other path parameters from the model. The model had a good fit ($\chi^2$ = 639, *df* = 313, RMSEA = .043, RMSEA 90% CI = .039 - .048, CFI = .979, and TLI = .976). As depicted in the first diagram of Figure 11, all paths were significant. For Problem Solving, the path coefficient was .459 ($p < .001$) with Controllable Stress, and was .431 ($p < .001$) with Uncontrollable Stress. For AW, the path coefficient was -.461 ($p < .001$) with Controllable Stress, and was -.234 ($p < .001$) with Uncontrollable Stress. The two predictors accounted for 23% of the variance in Controllable Stress and 15% of the variance in Uncontrollable Stress. The amount of variance in perceived stress explained by Problem Solving and AW were similar to the basic model that included all the HPC latent variables.

Because of the further testing of interactive effects, the same nested model was also examined using the robust maximum likelihood estimation (MLR) and Monte Carlo (1000) integration approach. Although some latent variables had non-normality issues, the robustness of the MLR estimator can handle non-normal, continuous data well. The results produced from the MLR estimation are similar to the WLSMV estimation. As depicted in the second diagram of Figure 11 (Model B), all paths were significant. For Problem Solving, the path coefficient was .430 ($p < .001$) with Controllable Stress, and was .427 ($p < .001$) with Uncontrollable Stress. For AW, the path coefficient was -.415 ($p < .001$) with Controllable Stress, and was -.216 ($p < .01$) with Uncontrollable Stress. The two predictors accounted for 21% of the variance in Controllable Stress and 15% of the variance in Uncontrollable Stress.

Model A:




Model B:

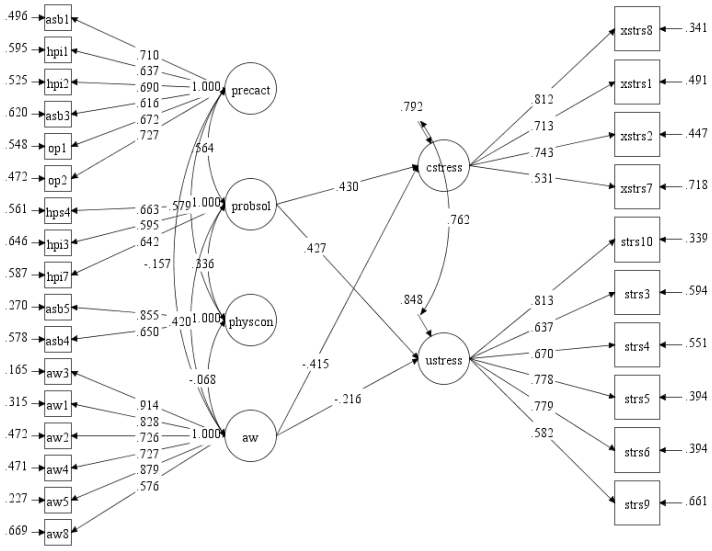



*Figure 11*. Model A uses robust weighted least squares estimation in which the error variances of the observed variables are not shown; Model B uses robust maximum likelihood estimation. HPC = Helicopter Parent Controlling; AW = parental Acceptance/Warmth; probsol = Problem Solving; precact = Precautionary Actions; physcon = Physical Concerns; cstress = Controllable Stress; ustress = Uncontrollable Stress; hps = Helicopter Parenting Scale; asb = Helicopter Parenting and Autonomy Supportive Behaviors; hpi = Helicopter parenting Instrument; op = Overparenting; xstr = reverse coded Perceived Stress Scale; str= Perceived Stress Scale.

**Figure 11.** Using Two Estimators (Robust Weighted Least Squares and Robust Maximum Likelihood) on Testing a Nested Structural Model Constituting HPC, AW and Stress Constructs in Sample Two (N = 551)

In order to test the moderation effect of AW on the link between HPC and stress, the interaction of Problem Solving and AW was added to the nested model. The nested model used only the latent variable of Problem Solving because other HPC latent variables did not predict stress significantly in the basic model. Using robust maximum likelihood estimation (MLR) and the Monte Carlo (1000) integration approach, the model constituting the interaction was examined. As depicted in Figure 12, the interaction variable (sol_aw) had a significant path to the Controllable Stress (path coefficient = -.114, $p < .05$), which indicated a larger deviation from zero than would be expected. Therefore there was a moderation effect of AW on the link between helicopter parents' problem solving and college students' perceived stress. The path coefficient of the interaction variable also had the reverse direction from Problem Solving's path coefficient, indicating the antagonistic effect in which increasing AW reversed the effect of helicopter parents' problem solving.

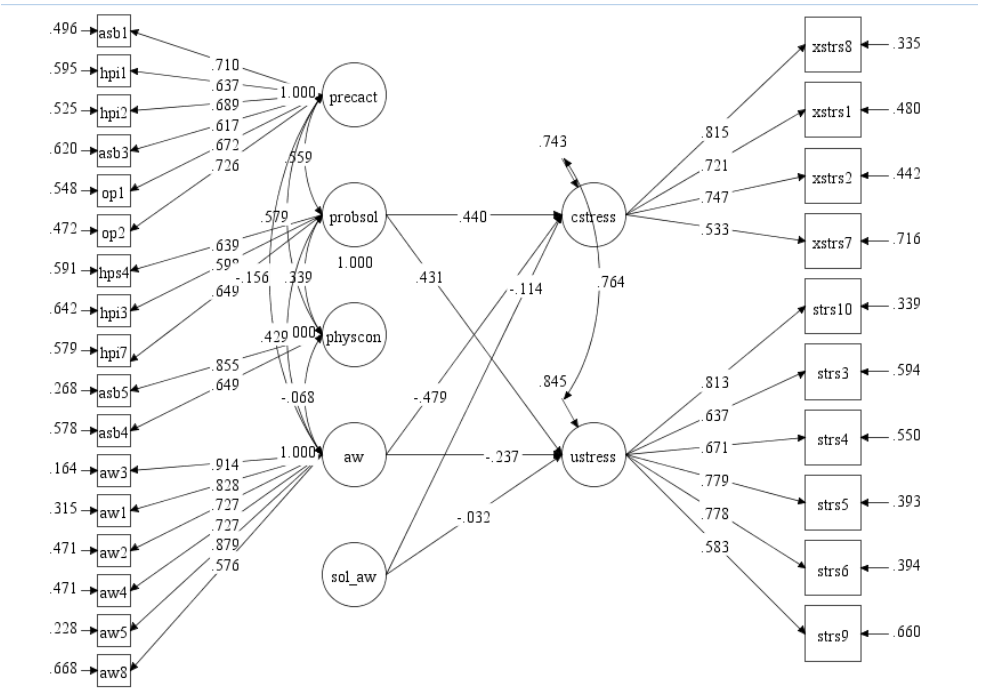



*Figure 12.* AW = parental Acceptance/Warmth; probsol = Problem Solving; precact = Precautionary Actions; physcon = Physical Concerns; sol_aw = interaction between probsol and AW; cstress = Controllable Stress; ustress = Uncontrollable Stress; hps = Helicopter Parenting Scale; asb = Helicopter Parenting and Autonomy Supportive Behaviors; hpi = Helicopter Parenting Instrument; op = Overparenting; xstr = reverse coded Perceived Stress Scale; str= Perceived Stress Scale; N = 551.

**Figure 12.** Standardized Structural Model on Testing the Interactive Effect of AW on the Link between Problem Solving and Stress in Sample Two

# CHAPTER V

# DISCUSSION

In the last chapter, the overview of research findings are first presented, followed by a discussion of the finding meanings in the contexts of current study, the HP literature, and the broad parenting literature. Study limitations and recommendations for future research are also discussed. Finally, implications for counseling and counselor education are suggested.

## Overview of Research Findings

Three research questions guided this study, and they were: (RQ1) "What are the underlying dimensions of the construct of helicopter parent controlling (HPC)?" (RQ2) "What is the relationship between HPC practices and college students' perceived stress?" (RQ3) "How do the effects of HPC practices on college students' perceived stress differ when accounting for parental acceptance/warmth (AW)?" Accordingly, three broad hypotheses were given: (1) the new construct of HPC might be multidimensional, and the HPC practices might include multifaceted features; (2) a predictive relationship might exist between HPC practices and college students' perceived stress, and (3) parental AW might be a strong factor that moderates the relationship between the HPC practices and college students' perceived stress.

First, for the RQ1, findings from the exploratory and confirmatory factor analyses in two samples revealed the multidimensionality of the HPC construct. Although both three-factor and four-factor solutions had good model fitting and reliability, and both were interpretable, the three-factor model had better parsimony than the four-factor model. In addition, there were no cross loadings for the three-factor model in the exploratory factor analyses. Using the three-

factor solution, the HPC construct consists of three dimensions, and they are: Precautionary Actions, Problem Solving, and Physical Concerns; using the four-factor solution, the HPC construct consists of four dimensions, and they are: Precautionary Actions, Problem Solving, Physical Concerns, and Whereabouts Concerns.

Second, for the RQ2, findings from the structural equation modeling (SEM) analyses in Sample Two revealed predictive relationships between Precautionary Actions and Stress, as well as between Problem Solving and Stress. Using the three-factor structure for the HPC construct, the structural models from the SEM analyses revealed the following major findings: (1) the paths were positive and significant from Precautionary Actions to both Stress factors, although the predictive effect on Controllable Stress was stronger than on Uncontrollable Stress. The path coefficients to the Controllable Stress were ranged between .28 and .35 in the tested models, and the path coefficients to the Uncontrollable Stress were only ranged between.13 and .16 in the tested models; (2) the paths were positive and significant from Problem Solving to Uncontrollable Stress. The path coefficients were ranged between.24 and .40 in the tested models; and (3) the effect sizes of the structural regression for all examined models were not large. Overall the tested models explained between 12% and 13% of the variance in Controllable Stress, and between 12% and 16% of the variance in Uncontrollable Stress.

Last, for the RQ3, when the factor of AW was added to the tested models, the effects of Precautionary Actions, and Problem Solving on Stress were changed to be different from the models when AW was not present. The structural models from the SEM analyses revealed the following major findings: (1) Precautionary Actions no longer predicted Stress when AW was added into the structural models. (2) The models' effect sizes were increased when AW and the HPC factors were the predictive variables simultaneously. For one criterion variable, Controllable Stress, the variance explained was increased from 12% when AW was not in the

models, to 24% when AW was in the models. (3) When accounting for AW, Problem Solving became a stronger predictor on Stress. The path coefficient from Problem Solving to Controllable Stress was changed dramatically, from .08 (Figure 8) when AW was not in the model, to .51 (Figure 10) when AW was in the model; likewise, the path coefficient from Problem Solving to Uncontrollable Stress was also increased (from .24 to .45). (4) In the structural models, the factor of AW negatively and significantly predicted Stress. The path coefficients were ranged between -.46 and -.50 for Controllable Stress, and -.23 and -.25 for Uncontrollable Stress. (5) With or without Precautionary Actions and Physical Concerns in the models, AW and Problem Solving explained similar amounts of variances in Stress (i.e., 24% in Controllable Stress and 14% in Uncontrollable Stress). (6) AW also acted as a moderator on the link between Problem Solving and Controllable Stress. The effect of the interaction between Problem Solving and AW was significant (path coefficient = -.11, $p < .05$), which quantified how the effect of Problem Solving on Controllable Stress changed when AW changed by one unit. The minus sign of the path coefficient further revealed that the moderation effect is antagonistic.

**Multifaceted Features of Helicopter Parent Controlling**

The findings about the multidimensional structure of the HPC construct advance the overall HP research by uncovering the multifaceted features of the HPC practices. The HP phenomenon is more complex than the typical interpretation of “hovering”. Previously, the HPC construct had only been investigated as unidimensional (e.g., Padilla-Walker & Nelson, 2012; Schiffrin et al., 2014; Segrin et al., 2012), and the one-factor structure from each single research effort was different, such as decision-making (Padilla-Walker & Nelson) and monitoring (Schiffrin et al.). Although most researchers agreed on the controlling feature of the HP practices in general, the dimensionality of the HPC construct was not clear.

The multidimensionality of the HPC construct indicates that helicopter parents not only "hover" over their college-going children when issues or problems occur, these parents also intervene in their children's lives in a broad way, such as monitoring whom their college-going children spend time with, and where they are. Although going to college or reaching the age of 18 are often considered markers for the transition from adolescence to young adulthood, HPC behaviors do not appear to moderate substantially during this developmental transition. Helicopter parents are involved in their children's daily lives as if these college students were adolescents.

The dimension of Precautionary Actions suggests that helicopter parents may act in a precautionary way to protect their college-going children. One might imagine that this type of protective behavior only happens to young children and adolescents. The study findings, on the other hand, suggest that today's college students do experience parents' over-protection. For example, helicopter parents may intervene in their college-going children's lives even when their children are not in physical or emotional distress; helicopter parents may also take an authority role with their college-going children, such as telling their children how to plan out certain activities. Some scholars have used the notion of *overparenting* to describe the new, broad social phenomenon of parenting during and after emerging adulthood (e.g., Bradley-Geist & Olson-Buchanan, 2014; Segrin et al., 2012; Segrin et al., 2015). Segrin et al. (2012) even argued that HP was a form of overparenting, and overparenting refers to parents' over-involvement, and "developmentally inappropriate tactics" to their adult children (p. 237). Although the constructs of HP and overparenting share some common features, the construct of HPC, and its tested dimensions in this study provide a concise understanding of the new parenting phenomenon.

Consistent with the HP literature, the findings revealed helicopter parents' "hovering" behaviors. The dimension of Problem Solving suggests that helicopter parents invest plenty of

time and energy into solving any crises or problems their college-going children may encounter. The intention of solving problems on behalf of their children may be due to love and care, yet the type of behaviors may not be age-appropriate for college-going children who both desire and *need* to develop their own autonomy. The term "growth-inhibiting" (Padilla-Walker & Nelson, 2012, p. 1187) describes the helicopter parents' controlling behaviors that may inhibit college students' ability to develop the skills needed to act on their own. Indeed, as indicated from the anecdotal evidence reported from helping professionals (e.g., Donatone, 2013; Levine, 2006), members of Millennial generation seem to possess limited coping skills, and they may tend to experience more social anxiety issues.

The findings on the HPC construct's Physical Concerns dimension, or both Physical Concerns and Whereabouts Concerns dimensions when adopting the four-factor solution, further suggest helicopter parents' involvement in their college-going children's lives, which may not be perceived as age-appropriate from the traditional parenting perspective. Helicopter parents' concerns about their college-going children's diet and exercise schedule seem no different to when their children were adolescents. It is interesting to note that the physical concerns feature was not factored as a single dimension in Schiffrin et al.'s (2014) study in which the two indicators of physical concerns were not distinguished enough from other observed variables. In this study, however, those two indicators appeared strongly loaded as a single dimension in both three-factor and four-factor solutions from both exploratory and confirmatory factor analyses in two samples. Future research is needed to further validate the factor structure of the HPC construct.

**Negative Effects of HPC Practices on College Students' Perceived Stress**

Consistent with the HP literature with regard to HP practices' negative effects on college students' psychological functioning and well-being (e.g., LeMoyne & Buchanan, 2011; Schiffrin

et al., 2014; Segrin et al., 2013), findings from the current study suggest that both helicopter parents' precautionary actions and problem solving practices positively predicted college students' perceived stress. To many Millennial college students, these helicopter parents' controlling behaviors are not welcomed, and perceived as intrusive. Behaviors such as solving problems on behalf of their children may be motived by parents' good intentions to help their children, yet their college-going children may interpret those behaviors differently. It is important to note that the magnitudes of the predictive effects were not large, as evidenced by the total variances in stress explained by the tested models (e.g., in between 12% and 16%). One should also be cautious about not interpreting the predictive effects as a causal relationship because current research findings could not prove that HPC practices caused the students' perceived stress. In fact, parents' behaving in certain ways may be due to their interpretation of children's desires or needs, based on a pattern of destructive or irresponsible behaviors.

**Effects of Helicopter Parent's Acceptance/Warmth**

It is also consistent with the parenting literature that parental AW acted as a strong predictor of college students' perceived stress in the current study. The parental AW had a significant, negative association with stress. The findings support the importance of parent-child bonding across a child's developmental stages, according to the attachment theory (Ainsworth et al., 1978; Bowlby, 1969). During college, the parent-child attachment bond remains crucial because college students are in need of emotional support from parents (Kolkhost et al., 2010). Although traditionally, a person's late teens and early 20s are when the attachment relationship shifts from one's parents to peers and romantic partners, the parent-child attachment bond remains important for members of the Millennial generation. For example, strong evidence indicated a close relationship between parents and Millennials (e.g., Fingerman et al., 2012).

Further, findings support AW's moderator role in the relationship between helicopter parents' problem solving and college students' perceived stress. For caring and supportive parents, college students no longer perceive parents' solving problems on their behalf as negative. Such a moderation effect further illustrates that parental AW is an important factor in parenting research during emerging and young adulthood. In one recent study, Nelson et al. (2015) also found a moderation effect between HP and college students' outcomes. Differently from the current study, their outcome variables were self-worth and risk behaviors, and the hierarchical regression was the primary analytic approach in their study.

It is safe to conclude that parental AW complicates the effects of HPC practices on college students. In addition to its moderation effect in the link between Problem Solving and Stress, the effects of both Precautionary Actions and Problem Solving were influenced by AW's presence. Findings suggest that when accounting for their parents' acceptance/warmth, college students no longer perceive parents' overly protective behaviors as intrusive. In addition, the significant increase of the path coefficients on the link from Problem Solving to Controllable Stress illustrates the positive relationship between AW and Problem Solving. In other words, more emotionally supportive parents tend to intervene and solve problems on behalf of their college-going children more than less emotionally supportive parents.

**Limitations of the Study and Recommendations for Future Research**

Three limitations should be addressed when considering the implications of the current study. First, the development of the new HPC measure was based on currently available HP scales from published articles. These scale items were generated from convenient resources such as relevant books associated with HP in the literature (Schiffrin et al., 2014), and words and phrases used in empirical research and the popular press (Odenweller, Booth-Butterfield, & Weber, 2014), rather than from qualitative studies in which the participation of college students

might provide accurate information about their personal experience with the HP practices. However, the process of the scale development in this study had a good integration and was developed step by step; the testing process involved both exploratory and confirmatory factor analyses using two large samples, and the reliability coefficients, omegas, for all HPC dimensions were between .77 and .90 across all tested models.

Second, the sampling approach may be a limitation. The two samples used in current study were from the same higher education institution, therefore may be homogenous. However, these two samples were from two large, randomly divided groups that included over 8,000 potential participants in each group. In addition, the chi-square tests showed that two samples differ in certain demographic information such as race and ethnicity. Further, the time of data collection was distinguished in the two samples. The first data were collected in the first half of the semester, and the second data were collected in the second half of the semester. Moreover, the sample size is also different in the two samples (755 vs. 551).

Last, participants may be homogenous in terms of their gender and ethnic background information. The first sample included 35% men, and 25% non-White participants, and the second sample included 33% men and 19% non-White participants. Although the racial and ethnic information in the two samples was not too different from the university's undergraduate enrollment information in fall 2014 in which 23% were non-Whites, fewer men participated in the current study compared to the university's enrollment information for fall 2014 in which 49% were men. However, it seems a common trend that women tend to participate in more survey studies than men. For example, in two survey studies about HP, one had 88% female college students (Schiffrin et al., 2014) and the other had 73% female college students (Padilla-Walker & Nelson, 2012).

Future research is needed on the validation of the HPC scale by using various samples and data, such as college students from private institutions and cross-national data. Future research is also needed to examine the construct distinction between the HPC dimensions and other well-researched parental control variables such as behavioral control and psychological control. Further, future research is also needed to develop more HP items, by using qualitative data from Millennial college students. Although loaded strongly on their respective factors, there were only two indicators for Physical Concerns and two for Whereabouts Concerns in the current study.

**Implications for Counseling and Counselor Education**

The research findings from current study can be invaluable to counseling and counselor education. From the clinical practice perspective, when working with today's Millennial students and their parents, counselors and counselor educators should be aware of (1) the changing dynamic of the relationship between parents and Millennials, (2) parents' important roles in Millennial clients' lives, and (3) the complexity of the parenting effects on Millennial clients' well-being. Counselors and counselor educators may have grown up in a cultural context where parenting did not exist during one's college lives. They may ignore or overlook the parental factors when assessing their Millennial clients' mental health concerns. Therefore, it is important for them to be aware that today's parents are more involved with their college-going children in general, and many parents continue playing important roles in their children's lives after they go to college. Meanwhile, counselors and counselor educators have to be aware of Millennial clients' autonomy need, and to what extent they perceive their parents' interventions as intrusive.

Indeed, Millennials are more likely to have a close relationship with their parents than college-going children from previous generations. Since parents' emotional support and warmth can be crucial buffering factors against Millennial students' developmental, adjustment and

mental health issues, it is important for counselors and counselor educators to separate parents' acceptance/warmth from their controlling behaviors, and also be aware that not all HP practices are necessarily destructive. When working with Millennial clients and their parents, counselors and counselor educators should encourage parents' support of their children, and help clients to explore the importance and necessity of autonomy development during college. Appropriate discussions may include preferred approaches to develop autonomy for adult children, such as parents' allowing adult children to learn from mistakes.

From the higher education perspective, it is important for counselor educators to develop effective approaches to work with Millennial students in the classroom, during supervision, and when advising/mentoring. Given the fact that more and more counselors-in-training are from the Millennial generation, the findings from this study also extend to graduate education. In addition, counselor educators are needed to understand the Millennials' generational factors. For example, Millennials may welcome using new technology in the classroom and supervision. On the other hand, they may prefer to communicate through social media rather than through face-to-face approaches, and may not be patient when dealing with complex topics that require in-depth analysis. Therefore, counselor educators have to be innovative by using Millennials' preferences to help design their teaching and supervising. For example, an online learning space could be used to post questions for students before a class, and to be used for students to post their answers, and comments to others' posts. During the class, the online discussion can be extended, and the students can be divided into groups which share similar opinions according to their online posts.

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# Appendix A

## Human Subjects Institutional Review Board Approval Letter

# WESTERN MICHIGAN UNIVERSITY

Human Subjects Institutional Review Board

Date: September 14, 2015

To: Stephen Craig, Principal Investigator
Baochun Zhou, Student Investigator for dissertation
Brooks Applegate, Co-Principal Investigator

From: Amy Naugle, Ph.D., Chair

Re: HSIRB Project Number 15-07-24

This letter will serve as confirmation that the changes to your research project titled "Conceptualization, Measurement, and Effects of Helicopter Parenting on College Students from the Millennial Generation: Implications for Counseling and the Counselor Education" requested in your memo received September 12, 2015 (to change age range to "18-33;" consent documents revised to reflect this change) have been approved by the Human Subjects Institutional Review Board.

The conditions and the duration of this approval are specified in the Policies of Western Michigan University.

Please note that you may **only** conduct this research exactly in the form it was approved. You must seek specific board approval for any changes in this project. You must also seek reapproval if the project extends beyond the termination date noted below. In addition if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

The Board wishes you success in the pursuit of your research goals.

**Approval Termination:** **August 4, 2016**

1903 W. Michigan Ave., Kalamazoo, MI 49008-5456
PHONE: (269) 387-8293 FAX: (269) 387-8276
CAMPUS SITE: 251 W. Walwood Hall

Appendix B

Informed Consent

**Western Michigan University**
**Counselor Education and Counseling Psychology**

| | |
|---|---|
| **Principal Investigator:** | Stephen Craig, Ph.D., and Brooks Applegate, Ph.D. |
| **Student Investigator:** | Baochun Zhou, M.A. |
| **Title of Study:** | Conceptualization, Measurement, and Effects of Helicopter Parenting on College Students from the Millennial Generation: Implications for Counseling and Counselor Education |

You have been invited to participate in a research project titled " Conceptualization, Measurement, and Effects of Helicopter Parenting on College Students from the Millennial Generation: Implications for Counseling and Counselor Education." This project will serve as Baochun Zhou's dissertation for the requirements of the Doctor of Philosophy Degree (Ph.D.) in Counselor Education and Supervision at Western Michigan University, Kalamazoo, Michigan. This consent document will explain the purpose of this research project and will go over all of the time commitments, the procedures used in the study, and the risks and benefits of participating in this research project. Please read this consent form carefully and completely and please ask any questions if you need more clarification.

**What are we trying to find out in this study?**
The purpose of this study is to understand a new generation of college students by empirically conceptualizing the construct of helicopter parenting (HP) within the parenting research context. Further, it will document the importance of HP on college students' psychological functioning by testing some predictive, mediating, and moderating effects.

**Who can participate in this study?**
To participate in this study, you must (1) have been self-identified as a college or university undergraduate student living in the U.S., (2) be between the ages of 18 and 33 years old, and (3) have been enrolled as freshman, sophomore, junior, or senior in fall 2015.

**Where will this study take place?**
The survey is taken online. You may access the online questionnaire at any convenient location for you.

**What is the time commitment for participating in this study?**
The estimated total time commitment required to participate in this survey study includes (a) 5-10 minutes to review informed consent, and (b) 15-20 minutes to complete a survey.

**What will you be asked to do if you choose to participate in this study?**
If you choose to participate in this study, you will be asked to (a) review, accept and agree with the information presented in this consent form, which is the opening letter of the survey, and (b) complete a questionnaire.

**What information is being measured during the study?**

In the questionnaire, you will be asked anonymously about (1) your demographic information, (2) your experiences of your primary parental caregiver's parenting practices in the past month.

A sample item is as follows: “How often has your primary caregiver wanted you to call or text her/him to let her/him know where you are?” (3) your feelings and thoughts in the past month. A sample item includes the following: “In the last month, how often have you felt confident about your ability to handle your personal problems?” and (4) your self-beliefs to cope with a variety of difficult demands in life. A sample item is as follows: “I can always manage to solve difficult problems if I try hard enough.”

**What are the risks of participating in this study and how will these risks be minimized?**

Given the nature of the survey questions in which you are asked about your personal experiences, you may experience some discomfort (e.g., feelings of stress or anxiety) that may come from answering the questionnaire. In the event of such a possibility, you may choose to pause or withdraw from the survey, with any penalty whatsoever.

**What are the benefits of participating in this study?**

There is no benefit to participating. Findings from this study will provide meaningful information for groups including but not limited to colleges and universities, counselor educators, counselors, and other helping professionals.

**Are there any costs associated with participating in this study?**
The only cost is the estimated 20-30 minute time.

**Is there any compensation for participating in this study?**

The compensation is a chance to win **one of twenty $10 Amazon.com gift cards** if you complete the survey and submit it by Sunday, October 11, 2015 at midnight.

**Who will have access to the information collected during this study?**

To protect your confidentiality the following methods will be taken after data collection: (a) survey data will be stored on a USB drive that will be locked in a cabinet in one of the principal investigators’ office at WMU for at least three years after close of the study, and (2) only the investigators (Dr. Stephen Craig, Dr. Brook Applegate, and Baochun Zhou) will have access to the data.

**What if you want to stop participating in this study?**
Participation in this study is completely voluntary. You can choose to stop participating in the study at any time for any or no reason. You will not suffer any prejudice or penalty by your decision to stop your participation. You will experience NO consequences, either academically or personally if you choose to withdraw from this study.

Should you have any questions prior to or during the survey, you may contact the primary investigators, Stephen Craig, at 269-387-XXXX or stephen.craig@wmich.edu, or Brooks Applegate, at 269-387-XXXX or brooks.applegate@wmich.edu; or the student investigator, Baochun at 269-340-XXXX or baochun.zhou@wmich.edu. You may also contact the Chair,

Human Subjects Institutional Review Board at 269-387-8293 or the Vice President for Research at 269-387-8298 if questions arise during the course of the study.

This consent has been approved by the Western Michigan University Human Subjects Institutional Review Board (HSIRB) on August 5, 2015. Do not participate after August 4, 2016.

---

I have read this informed consent document. The risks and benefits have been explained to me. I agree to take part in this study.

Participating in this survey online indicates your consent for use of the answers you supply.

---

Appendix C

Original and Follow-Up Email Invitations to Potential Participants

## Original Email Invitation

Dear [undergraduate student first name],

I am writing to invite you to take an important survey for an exciting, intriguing research project that is centered in the parenting factors and college students' perceived stress and coping with stress. This project will serve as Baochun Zhou's dissertation project for the requirements of the Doctor of Philosophy degree. Your opinions will help to understand the indicators and their dynamics to college students' mental health. This information will help counselors and psychologists to implement best practices for our college student population.

Please consider joining me and becoming part of this important study. To be eligible to participate, you must be at least 18 and no older than 24.The whole survey is expected to take about 20 minutes.

To appreciate your participation, you will have a chance to win one of four $50 Amazon gift card if you complete the survey and submit it by DDMM. If you complete and submit the survey by DDMM, you will be put in the second drawing to win one of two $25 Amazon gift card. The survey is anonymous and you have the right to withdraw from the survey at any time without penalty.

Follow this link to the Survey: URL:

This study has been approved by the WMU Human Subjects Institutional Review Board (#15-07-24). Detailed information about the survey (e.g., risks and benefits of participating) will be explained in the consent form, the front page of the survey. Should you have any questions prior to or during the survey, you may contact the primary investigator, Stephen Craig, at 269-387-XXXX or stephen.craig@wmich.edu, or Baochun at 269-340-XXXX or baochun.zhou@wmich.edu. You may also contact the Chair, Human Subjects Institutional Review Board at 269-387-8293 or the Vice President for Research at 269-387-8298 if questions arise during the course of the study.

Thank you very much for your time and participation!

Sincerely,
Baochun Zhou, MA, LPC, NCC
Doctoral Student
Counselor Education and Supervision
Western Michigan University

**Follow-Up Email Invitation**

Dear [undergraduate student first name],

I extended an invitation to you approximately one week ago to take an important survey in an effort to learn more about the parenting factors and college students' perceived stress and coping with stress. If you have already taken the survey, I thank you for your time. If you have not yet taken the survey, I ask that you consider participating. I will not contact you again after this second invitation.

To be eligible to participate, you must be at least 18 and no older than 24.The whole survey is expected to take 20 minutes.

To appreciate your participation, you will have a chance to win one of two $25 Amazon gift card if you complete and submit the survey by DDMM. The survey is anonymous and you have the right to withdraw from the survey at any time without penalty.

Follow this link to the Survey: URL:

This study has been approved by the WMU Human Subjects Institutional Review Board (#15-07-24). Detailed information about the survey (e.g., risks and benefits of participating) will be explained in the consent form, the opening letter of the document. Should you have any questions prior to or during the survey, you may contact the primary investigator, Stephen Craig, at 269-387-XXXX or stephen.craig@wmich.edu, or Baochun at 269-340-XXXX or baochun.zhou@wmich.edu. You may also contact the Chair, Human Subjects Institutional Review Board at 269-387-8293 or the Vice President for Research at 269-387-8298 if questions arise during the course of the study.

Thank you very much for your time and participation!

Sincerely,
Baochun Zhou, MA, LPC, NCC
Doctoral Student
Counselor Education and Supervision
Western Michigan University

Appendix D

Helicopter Parent Controlling Items

## I: Four Initial Helicopter Parenting Scales

**Helicopter Parenting Scale (HPS)**

1. My primary caregiver makes important decisions for me (e.g., where I live, where I work, what classes I take).
2. My primary caregiver intervenes in settling disputes with my roommates or friends
3. My primary caregiver intervenes in solving problems with my professors or employers
4. My primary caregiver solves any crisis or problem I might have
5. My primary caregiver looks for jobs for me or tries to find other opportunities for me (e.g., internships, study abroad)

**Helicopter Parenting and Autonomy Supportive Behaviors (ASB)**

1. My primary caregiver monitors who I spend time with
2. My primary caregiver calls me to track my schoolwork (i.e., how I'm doing in school, what my grades are like, etc.)
3. My primary caregiver regularly wants me to call or text her/him to let her/him know where I am
4. My primary caregiver monitors my exercise schedule
5. My primary caregiver monitors my diet
6. When I am home with my primary caregiver, she/he sets a curfew (a certain time that I must be home by every night)

**Helicopter Parenting Instrument (HPI)**

1. My primary caregiver discourages me from making decisions that he or she disagrees with.
2. My primary caregiver doesn't intervene in my life unless he or she notices me experiencing physical or emotional trauma (reverse-coded).
3. My primary caregiver invests more time and energy into my projects than I do.
4. My primary caregiver voices his or her opinion about my personal relationships.
5. My primary caregiver insists that I keep him or her informed of my daily activities.
6. When I have to go somewhere (e.g., doctor appointments, academic meetings, the bank, clothing stores), my primary caregiver accompanies me.
7. When I am going through a difficult situation, my primary caregiver always tries to fix it.

**Overparenting Measure (OP)**

1. My primary caregiver tries to solve problems for me before I even experience them.
2. My primary caregiver tells me how to plan out certain activities.
3. My primary caregiver invests a lot of energy helping me troubleshoot and solve problems.
4. My primary caregiver tries to keep me away from environments that might lead me into trouble.
5. My primary caregiver tries to stay one step ahead of what I am doing so that he or she can help me minimize any obstacles that could be encountered.
6. My primary caregiver does anything that he or she can to keep me out of harm's way.

## II: Selected 22 Items Used in Sample One

1. (hps1) How often has [your primary caregiver] made important decisions for you in the past month? (e.g., where you live, where you work, what classes you take)
2. (hps2) In the past month, how often has [your primary caregiver] intervened in settling disputes with your roommates or friends?
3. (hps3) In the past month, how often has [your primary caregiver] intervened in solving problems with your professors or employers?
4. (hps4) How often has [your primary caregiver] solved any crisis or problem you might have had in the past month?
5. (hps5) In the past month, how often has [your primary caregiver] looked for jobs for you or tried to find other opportunities for you? (e.g., internships, study abroad)
6. (asb1) In the past month, how often has [your primary caregiver] monitored who you spent time with?
7. (asb2) In the past month, how often has [your primary caregiver] called you to track your schoolwork? (i.e., how you were doing in school, what your grades were like, etc.)
8. (asb3) In the past month, how often has [your primary caregiver] wanted you to call or text her/him to let her/him know where you are?
9. (asb4) How often has [your primary caregiver] monitored your exercise schedule in the past month?
10. (asb5) In the past month, how often has [your primary caregiver] monitored your diet?

11. (asb6) In the past month, when you were home with [your primary caregiver], how often has she/he set a curfew? (a certain time that you must be home by every night)
12. (hpi1) In the past month, how often has [your primary caregiver] discouraged you from making decisions that she/he disagrees with?
13. (hpi2) In the past month, how often has [your primary caregiver] intervened in your life even when you are not in physical or emotional distress?
14. (hpi3) In the past month, how often has [your primary caregiver] invested a lot of energy helping you troubleshoot and solve problems?
15. (hpi4) In the past month, how often has [your primary caregiver] voiced her/his opinion about your personal relationships?
16. (hpi5) In the past month, how often has [your primary caregiver] insisted that you keep her/him informed of your daily activities?
17. (hpi6) In the past month, when you had to go somewhere (e.g., doctor appointments, academic meetings, and the bank, clothing stores), how often has [your primary caregiver] accompanied you or asked that you check in with her/him?
18. (hpi7) In the past month, how often has [your primary caregiver] insisted that you keep her/him informed of your daily activities?
19. (op1) In the past month, how often has [your primary caregiver] tried to solve problems for you before you even experience them?
20. (op2) In the past month, how often has [your primary caregiver] told you how to plan out certain activities?
21. (op3) In the past month, how often has [your primary caregiver] tried to keep you away from environments that might lead you into trouble?
22. (op4) In the past month, how often has [your primary caregiver] tried to stay one step ahead of what you were doing so that she/he could help you minimize any obstacles that could be encountered?

**III: Final Three-Factor Structure of the HPC Construct**

1. (hps4) How often has [your primary caregiver] solved any crisis or problem you might have had in the past month?

2. (hpi3) In the past month, how often has [your primary caregiver] invested a lot of energy helping you troubleshoot and solve problems?
3. (hpi7) In the past month, how often has [your primary caregiver] insisted that you keep her/him informed of your daily activities?
4. (asb1) In the past month, how often has [your primary caregiver] monitored who you spent time with?
5. (op2) In the past month, how often has [your primary caregiver] told you how to plan out certain activities?
6. (asb3) In the past month, how often has [your primary caregiver] wanted you to call or text her/him to let her/him know where you are?
7. (hpi1) In the past month, how often has [your primary caregiver] discouraged you from making decisions that she/he disagrees with?
8. (hpi2) In the past month, how often has [your primary caregiver] intervened in your life even when you are not in physical or emotional distress?
9. (op1) In the past month, how often has [your primary caregiver] tried to solve problems for you before you even experience them?
10. (asb5) In the past month, how often has [your primary caregiver] monitored your diet?
11. (asb4) How often has [your primary caregiver] monitored your exercise schedule in the past month?

**IV: Final Four-Factor Structure of the HPC Construct**

1. (hps4) How often has [your primary caregiver] solved any crisis or problem you might have had in the past month?
2. (hpi7) In the past month, how often has [your primary caregiver] insisted that you keep her/him informed of your daily activities?
3. (hpi3) In the past month, how often has [your primary caregiver] invested a lot of energy helping you troubleshoot and solve problems?
4. (op2) In the past month, how often has [your primary caregiver] told you how to plan out certain activities?
5. (hpi1) In the past month, how often has [your primary caregiver] discouraged you from making decisions that she/he disagrees with?

6. (hpi2) In the past month, how often has [your primary caregiver] intervened in your life even when you are not in physical or emotional distress?
7. (hps3) In the past month, how often has [your primary caregiver] intervened in solving problems with your professors or employers?
8. (asb6) In the past month, when you were home with [your primary caregiver], how often has she/he set a curfew? (a certain time that you must be home by every night)
9. (op1) In the past month, how often has [your primary caregiver] tried to solve problems for you before you even experience them?
10. (asb5) In the past month, how often has [your primary caregiver] monitored your diet?
11. (asb4) How often has [your primary caregiver] monitored your exercise schedule in the past month?
12. (asb3) In the past month, how often has [your primary caregiver] wanted you to call or text her/him to let her/him know where you are?
13. (hpi5) In the past month, how often has [your primary caregiver] insisted that you keep her/him informed of your daily activities?

# Appendix E

## Summary Tables of the Descriptive Statistics and Correlations in the Factor Analyses and Structural Equation Modeling Analyses

Table E1

*Summary of Correlations, Means, and Standard Deviations for Observed Variables of Exploratory Factor Analysis for the HPC Measure in Sample One (N = 755)*

| | M | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **hps1 (1)** | 1.95 | 1.01 | - | | | | | | | | | | | | | | | | | | | | | |
| **hps2 (2)** | 1.25 | .61 | .46 | .- | | | | | | | | | | | | | | | | | | | | |
| **hps3 (3)** | 1.35 | .77 | .52 | .55 | - | | | | | | | | | | | | | | | | | | | |
| **hps4 (4)** | 2.17 | 1.08 | .51 | .49 | .42 | - | | | | | | | | | | | | | | | | | | |
| **hps5 (5)** | 1.75 | 1.04 | .48 | .43 | .49 | .39 | - | | | | | | | | | | | | | | | | | |
| **asb1 (6)** | 1.47 | .86 | .42 | .49 | .43 | .28 | .38 | - | | | | | | | | | | | | | | | | |
| **asb2 (7)** | 2.55 | 1.29 | .45 | .40 | .34 | .41 | .34 | .41 | - | | | | | | | | | | | | | | | |
| **asb3 (8)** | 2.42 | 1.23 | .38 | .38 | .34 | .36 | .30 | .53 | .44 | - | | | | | | | | | | | | | | |
| **asb4 (9)** | 1.36 | .80 | .35 | .32 | .28 | .25 | .32 | .47 | .23 | .36 | - | | | | | | | | | | | | | |
| **asb5 (10)** | 1.54 | .91 | .33 | .36 | .24 | .22 | .33 | .55 | .27 | .40 | .73 | - | | | | | | | | | | | | |
| **asb6 (11)** | 1.72 | 1.23 | .40 | .35 | .41 | .24 | .27 | .54 | .37 | .51 | .36 | .41 | - | | | | | | | | | | | |
| **hpi1 (12)** | 2.02 | 1.09 | .32 | .35 | .34 | .30 | .29 | .55 | .31 | .41 | .33 | .39 | .41 | - | | | | | | | | | | |
| **hpi2 (13)** | 1.83 | 1.02 | .43 | .47 | .41 | .41 | .40 | .51 | .42 | .45 | .36 | .35 | .45 | .55 | - | | | | | | | | | |
| **hpi3 (14)** | 2.45 | 1.15 | .40 | .36 | .37 | .57 | .36 | .29 | .41 | .30 | .21 | .26 | .24 | .27 | .37 | - | | | | | | | | |
| **hpi4 (15)** | 2.52 | 1.27 | .42 | .42 | .40 | .35 | .30 | .46 | .40 | .39 | .22 | .27 | .42 | .48 | .52 | .36 | - | | | | | | | |
| **hpi5 (16)** | 2.00 | 1.16 | .40 | .38 | .37 | .32 | .30 | .49 | .49 | .68 | .42 | .40 | .44 | .44 | .46 | .34 | .38 | - | | | | | | |
| **hpi6 (17)** | 2.23 | 1.28 | .43 | .36 | .36 | .35 | .30 | .40 | .44 | .45 | .30 | .40 | .39 | .34 | .39 | .37 | .30 | .47 | - | | | | | |
| **hpi7 (18)** | 2.63 | 1.23 | .51 | .46 | .35 | .67 | .37 | .26 | .43 | .33 | .25 | .27 | .24 | .27 | .44 | .58 | .38 | .36 | .36 | - | | | | |
| **op1 (19)** | 1.78 | 1.05 | .41 | .42 | .44 | .46 | .47 | .47 | .40 | .40 | .34 | .39 | .34 | .44 | .56 | .41 | .37 | .44 | .35 | .51 | - | | | |
| **op2 (20)** | 1.75 | .95 | .51 | .47 | .43 | .39 | .43 | .57 | .47 | .58 | .46 | .45 | .47 | .53 | .55 | .41 | .44 | .59 | .41 | .36 | .55 | - | | |
| **op3 (21)** | 2.54 | 1.37 | .54 | .44 | .45 | .47 | .35 | .48 | .48 | .48 | .40 | .41 | .56 | .49 | .51 | .39 | .57 | .42 | .47 | .44 | .51 | .51 | - | |
| **op4 (22)** | 1.67 | .98 | .52 | .48 | .39 | .50 | .41 | .55 | .47 | .47 | .38 | .38 | .38 | .47 | .55 | .49 | .41 | .49 | .38 | .56 | .64 | .56 | .55 | - |

*Note*. HPC = Helicopter Parent Controlling; hps = Helicopter Parenting Scale; asb = Helicopter Parenting and Autonomy Supportive Behaviors; hpi = Helicopter Parenting Instrument; op = Overparenting. For all correlation coefficients, $p < .001$.

Table E2

*Summary of Correlations, Means, and Standard Deviations for Observed Variables of Confirmatory Factor Analysis for the HPC Measure in Sample Two (N = 551)*

| | M | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **hps1 (1)** | 1.51 | .92 | - | | | | | | | | | | | | | | | | | | | |
| **hps2 (2)** | 1.30 | .72 | .61* | - | | | | | | | | | | | | | | | | | | |
| **hps3 (3)** | 1.39 | .86 | .60* | .58* | - | | | | | | | | | | | | | | | | | |
| **hps4 (4)** | 2.02 | 1.07 | .53* | .52* | .46* | - | | | | | | | | | | | | | | | | |
| **hps5 (5)** | 1.65 | .97 | .52* | .32* | .40* | .38* | - | | | | | | | | | | | | | | | |
| **asb1 (6)** | 1.50 | .96 | .64* | .54* | .54* | .34* | .38* | - | | | | | | | | | | | | | | |
| **asb2 (7)** | 2.59 | 1.22 | .41* | .42* | .41* | .29* | .33* | .34* | - | | | | | | | | | | | | | |
| **asb3 (8)** | 2.52 | 1.31 | .49* | .42* | .38* | .35* | .31* | .60* | .38* | - | | | | | | | | | | | | |
| **asb4 (9)** | 1.44 | .87 | .43* | .47* | .43* | .22* | .28* | .47* | .28* | .27* | - | | | | | | | | | | | |
| **asb5 (10)** | 1.67 | .98 | .45* | .40* | .43* | .28* | .29* | .55* | .29* | .37* | .69* | - | | | | | | | | | | |
| **asb6 (11)** | 1.67 | 1.21 | .58* | .31* | .47* | .22* | .32* | .56* | .35* | .39* | .28* | .29* | - | | | | | | | | | |
| **hpi1 (12)** | 2.11 | 1.15 | .47* | .28* | .25* | .34* | .25* | .54* | .22* | .45* | .23* | .32* | .42* | - | | | | | | | | |
| **hpi2 (13)** | 1.89 | 1.08 | .55* | .56* | .47* | .44* | .36* | .61* | .31* | .51* | .34* | .36* | .43* | .51* | - | | | | | | | |
| **hpi3 (14)** | 2.79 | 1.14 | .25* | .31* | .25* | .45* | .35* | .18* | .33* | .23* | .16^ | .18* | .09 | .19* | .24* | - | | | | | | |
| **hpi5 (15)** | 2.20 | 1.13 | .46* | .43* | .43* | .28* | .26* | .59* | .42* | .64* | .34* | .42* | .41* | .38* | .51* | .20* | .- | | | | | |
| **hpi7 (16)** | 3.08 | 1.22 | .27* | .26* | .37* | .48* | .29* | .20* | .40* | .32* | .17^ | .16^ | .19* | .22* | .33* | .45* | .32* | .- | | | | |
| **op1 (17)** | 1.78 | 1.11 | .56* | .54* | .48* | .44* | .34* | .58* | .31* | .44* | .34* | .34* | .42* | .49* | .56* | .30* | .40* | .27* | .- | | | |
| **op2 (18)** | 1.81 | 1.02 | .58* | .48* | .42* | .39* | .35* | .63* | .32* | .49* | .35* | .46* | .42* | .53* | .52* | .26* | .48* | .25* | .60* | - | | |
| **op3 (19)** | 3.01 | 1.35 | .39* | .26* | .30* | .31* | .21* | .42* | .44* | .41* | .16^ | .15^ | .42* | .46* | .32* | .32* | .35* | .37* | .42* | .35* | - | |
| **op4 (20)** | 1.64 | .95 | .62* | .59* | .54* | .46* | .41* | .59* | .41* | .52* | .35* | .34* | .42* | .48* | .53* | .39* | .52* | .30* | .60* | .65* | .48* | - |

*Note.* HPC = Helicopter Parent Controlling; hps = Helicopter Parenting Scale; asb = Helicopter Parenting and Autonomy Supportive Behaviors; hpi = Helicopter Parenting Instrument; op = Overparenting; *$p < .001$, ^$p < .05$.

Table E3

*Summary of Correlations, Means, and Standard Deviations for Observed Variables of HPC and Stress Measures in Sample Two*

| | M | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **hps4 (1)** | 2.02 | 1.07 | - | | | | | | | | | | | | | | | | | | | | |
| **asb1 (2)** | 1.50 | .96 | .34* | .- | | | | | | | | | | | | | | | | | | | |
| **asb3 (3)** | 2.52 | .47 | .35* | .60* | - | | | | | | | | | | | | | | | | | | |
| **asb4 (4)** | 1.44 | .87 | .21* | .47* | .28* | - | | | | | | | | | | | | | | | | | |
| **asb5 (5)** | 1.67 | .98 | .27* | .55* | .37* | .70* | - | | | | | | | | | | | | | | | | |
| **hpi1 (6)** | 2.11 | 1.15 | .33* | .54* | .45* | .22* | .32* | - | | | | | | | | | | | | | | | |
| **hpi2 (7)** | 1.89 | 1.08 | .44* | .61* | .51* | .34* | .37* | .51* | - | | | | | | | | | | | | | | |
| **hpi3 (8)** | 2.79 | 1.14 | .45* | .18^ | .23* | .16^ | .18* | .19* | .24* | - | | | | | | | | | | | | | |
| **hpi7 (9)** | 3.08 | 1.22 | .48* | .20* | .32* | .18^ | .16^ | .22* | .33* | .45* | - | | | | | | | | | | | | |
| **op1 (10)** | 1.78 | 1.11 | .44* | .57* | .45* | .33* | .34* | .48* | .56* | .30* | .27* | - | | | | | | | | | | | |
| **op2 (11)** | 1.81 | 1.02 | .39* | .63* | .49* | .35* | .46* | .53* | .52* | .26* | .25* | .59* | - | | | | | | | | | | |
| **xstr1 (12)** | 2.13 | . 90 | .24* | .22* | .19* | .10 | .17^ | .32* | .18* | .13^ | .17* | .27* | .28* | - | | | | | | | | | |
| **xstr2 (13)** | 2.64 | .91 | .17* | .20* | .12^ | .05 | .17^ | .25* | .16* | .09 | .12^ | .18* | .20* | .64* | - | | | | | | | | |
| **str3 (14)** | 3.71 | .97 | .14^ | .03 | .06 | .01 | .03 | .17* | .12^ | .13^ | .15^ | .07 | .06 | .31* | .41* | - | | | | | | | |
| **str4 (15)** | 3.01 | 1.02 | .22* | .12^ | .18* | .02 | .13^ | .21* | .14^ | .14^ | .13^ | .13^ | .12^ | .34* | .40* | .56* | - | | | | | | |
| **str5 (16)** | 2.80 | 1.12 | .24* | .18* | .14^ | .08 | .15^ | .24* | .16* | .13^ | .17* | .21* | .16* | .50* | .51* | .55* | .62* | - | | | | | |
| **str6 (17)** | 2.67 | 1.15 | .21* | .15^ | .09 | .08 | .20* | .27* | .16^ | .09^ | .16* | .16^ | .18* | .54* | .47* | .52* | .53* | .66* | - | | | | |
| **xstr7 (18)** | 2.57 | .96 | .12^ | .09 | .05 | .11^ | .19* | .13^ | .08 | .08 | .10^ | .15^ | .16^ | .45* | .42* | .28* | .27* | .34* | .37* | - | | | |
| **xstr8 (19)** | 2.65 | .91 | .14^ | .21* | .11^ | .07 | .19* | .26* | .13^ | .09 | .11^ | .20* | .20* | .62* | .66* | .48* | .40* | .52* | .67* | .49* | - | | |
| **str9 (20)** | 2.87 | 1.04 | .21* | .09 | .13^ | .19* | .14^ | .18* | .12^ | .07 | .13^ | .12^ | .12^ | .34* | .38* | .37* | .52* | .51* | .46* | .34* | .33* | - | |
| **str10 (21)** | 2.63 | 1.16 | .27* | .19* | .17* | .18^ | .19* | .28* | .20* | .16* | .16* | .25* | .23* | .49* | .52* | .62* | .55* | .66* | .69* | .39* | .63* | .53* | - |

*Note.* HPC = Helicopter Parent Controlling; hps = Helicopter Parenting Scale; asb = Helicopter Parenting and Autonomy Supportive Behaviors; hpi = Helicopter Parenting Instrument; op = Overparenting; xstr = reverse coded Perceived Stress Scale; str= Perceived Stress Scale; N = 551; * $p < .001$; ^$p < .05$.

Table E4

*Summary of Correlations, Means, and Standard Deviations for Observed Variables of HPC, AW, and Stress Measures in Sample Two (N = 551)*

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1. hps4** | - | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **2. asb1** | .35* | - | | | | | | | | | | | | | | | | | | | | | | | | | |
| **3. asb3** | .35* | .60* | - | | | | | | | | | | | | | | | | | | | | | | | | |
| **4. asb4** | .22* | .46* | .28* | - | | | | | | | | | | | | | | | | | | | | | | | |
| **5. asb5** | .28* | .55* | .37* | .70* | - | | | | | | | | | | | | | | | | | | | | | | |
| **6. hpi1** | .34* | .53* | .46* | .22* | .32* | - | | | | | | | | | | | | | | | | | | | | | |
| **7. hpi2** | .45* | .61* | .51* | .34* | .37* | .51* | - | | | | | | | | | | | | | | | | | | | | |
| **8. hpi3** | .45* | .18^ | .22* | .17^ | .18* | .19* | .24* | - | | | | | | | | | | | | | | | | | | | |
| **9. hpi7** | .48* | .20* | .32* | .18^ | .15^ | .23* | .34* | .45* | - | | | | | | | | | | | | | | | | | | |
| **10. op1** | .45* | .58* | .44* | .33* | .33* | .49* | .56* | .32* | .28* | - | | | | | | | | | | | | | | | | | |
| **11. op2** | .39* | .63* | .49* | .35* | .46* | .54* | .53* | .26* | .24* | .60* | - | | | | | | | | | | | | | | | | |
| **12. xst1** | .24* | .22* | .18* | .10 | .17^ | .32* | .18* | .13^ | .17* | .27* | .27* | - | | | | | | | | | | | | | | | |
| **13. xst2** | .18* | .20* | .12^ | .05 | .17^ | .25* | .18* | .10 | .12^ | .19* | .19* | .64* | - | | | | | | | | | | | | | | |
| **14. st3** | .14^ | .02 | .05 | .00 | .03 | .16* | .12^ | .12^ | .15^ | .08 | .05 | .31* | .42* | - | | | | | | | | | | | | | |
| **15. st4** | .22* | .11^ | .18^ | .02 | .13^ | .21* | .15^ | .14^ | .12^ | .14^ | .11^ | .34* | .40* | .56* | - | | | | | | | | | | | | |
| **16. st5** | .24* | .16^ | .12^ | .07 | .14^ | .23* | .16* | .12 | .17* | .21* | .15^ | .50* | .51* | .54* | .62* | - | | | | | | | | | | | |
| **17. st6** | .20* | .14^ | .09 | .08 | .20* | .26* | .16^ | .09 | .17* | .16^ | .18* | .53* | .48* | .51* | .54* | .66* | - | | | | | | | | | | |
| **18. xst7** | .12^ | .10 | .06 | .12^ | .20* | .13^ | .09 | .09 | .11^ | .16^ | .17* | .45* | .42* | .28* | .27* | .35* | .37* | - | | | | | | | | | |
| **19. xst8** | .13^ | .20* | .09 | .07 | .19* | .26* | .14^ | .08 | .11^ | .20* | .20* | .62* | .68* | .47* | .40* | .50* | .67* | .50* | - | | | | | | | | |
| **20. st9** | .21* | .07 | .13^ | .19^ | .14^ | .17* | .13^ | .07 | .14^ | .12^ | .12^ | .34* | .38* | .36* | .52* | .51* | .45* | .34* | .33* | - | | | | | | | |
| **21. st10** | .27* | .18^ | .16^ | .18^ | .18* | .27* | .20* | .16* | .17* | .24* | .23* | .49* | .52* | .61* | .55* | .65* | .70* | .40* | .62* | .53* | - | | | | | | |
| **22. aw1** | .26* | -.16^ | .03 | .02 | -.09 | -.12^ | -.10 | .39* | .32* | -.12^ | -.14^ | -.18* | -.22* | .03 | -.01 | -.01 | -.05 | -.15^ | -.20* | -.04 | -05 | - | | | | | |
| **23. aw2** | .06 | -.17^ | .02 | -.01 | -.08 | -.15^ | -.07 | .24* | .24* | -.13^ | -.15^ | -.19* | -.18* | .02 | .00 | -.05 | -.09 | -.13^ | -.19* | -.02 | -.10 | .64* | - | | | | |
| **24. aw3** | .16^ | -.17^ | -.01 | .01 | -.07 | -.16^ | -.07 | .27* | .31* | -.15^ | -.19* | -.24* | -.19* | .01 | -.02 | -.01 | -.08 | -.18* | -.20* | -.03 | -.03 | .85* | .73* | - | | | |
| **25. aw4** | .15^ | -.17^ | .04 | -.02 | -.08 | -.14^ | -.10 | .27* | .31* | -.11 | -.18^ | -.15^ | -.12^ | -.00 | -.00 | -.05 | -.07 | -.15^ | -.17^ | -.02 | -.06 | .69* | .79* | .75* | - | | |
| **26. aw5** | .17* | -.09 | .09 | .04 | -.07 | -.09 | -.03 | .32* | .36* | -.10 | -.10 | -.12^ | -.12^ | -.01 | -.00 | -.02 | -.05 | -.13^ | -.18^ | .03 | -.04 | .82* | .73* | .89* | .75* | - | |
| **27. aw8** | .14^ | -.22* | .02 | .01 | -.08 | -.21* | -.10 | .24* | .23* | -.09 | -.13^ | -.14^ | -.22* | -.07 | -.04 | -.06 | -.14 | -.03 | -.25* | -.03 | -.09 | .55* | .64* | .57* | .63* | .59* | - |
| **M** | 2.02 | 1.50 | 2.53 | 1.44 | 1.68 | 2.11 | 1.89 | 2.80 | 3.09 | 1.78 | 1.82 | 2.13 | 2.65 | 3.70 | 3.02 | 2.81 | 2.67 | 2.57 | 2.65 | 2.86 | 2.64 | 4.04 | 4.29 | 4.05 | 4.36 | 3.94 | 3.99 |
| **SD** | 1.07 | .96 | 1.31 | .87 | .99 | 1.15 | 1.09 | 1.13 | 1.23 | 1.11 | 1.03 | .91 | .91 | .97 | 1.02 | 1.19 | 1.15 | .97 | .91 | 1.04 | 1.16 | 1.10 | .97 | 1.14 | .98 | 1.23 | 1.12 |

*Note.* HPC = Helicopter Parent Controlling; AW = parental Acceptance/Warmth; hps = Helicopter Parenting Scale; asb = Helicopter Parenting and Autonomy Supportive Behaviors; hpi = Helicopter Parenting Instrument; op = Overparenting; xstr = reverse coded Perceived Stress Scale; str= Perceived Stress Scale; * p < .001; ^p < .05.