

The Implications of Childhood Adultification on the Mental Health of Young Adults Among  
Chinese and Taiwanese Immigrant Families

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**ABSTRACT**

The present study examined the impact of adultification on the mental health of Chinese immigrant young adults. Given the emphasis of Chinese cultural norms on interdependence and filial piety, I also explored whether family obligation attitudes influence how Chinese immigrant young adults perceive adultification experiences. Findings indicated that family obligation attitudes have a moderating effect on adultification when adultification plays a mediating role between acculturative stress and psychological distress, and on the well-being of Chinese immigrant young adults. The findings suggested that Chinese immigrant offspring who hold very traditional familial attitudes and are highly committed to family obligations tend to reinforce the effect of acculturative stress on adultification, although acculturative stress did not significantly predict adultification experiences. In addition, the findings also indicated that when adultification experiences were at the highest level, they served to strengthen the effect of acculturative stress on mental health outcomes. According to the study findings, taking the cultural value of the emphasis on Chinese family obligation into consideration when interpreting adultification experiences and its impact on the mental health outcomes among Chinese immigrant young adults is crucial.

## **DEDICATION**

To my grandfather and grandmother who I hoped to be present with my family to witness the completion of my degree and be here to see me graduate. I would like to dedicate this dissertation to them in honoring their spirit of helping me stay perseverant and never give up.

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## CHAPTER ONE

### Introduction

Childhood adultification is a process by which children or adolescents take on adult-like family roles and provide instrumental and emotional support for their families. Typically, adult-like responsibilities and support are provided by parents and adults within the family (Titzmann, 2012; Walsh, Shulman, Bar-On, & Tsur, 2006). When children and adolescents perform these roles, the experience can have unique developmental implications for them, which include disturbances of their socio-emotional development and their ability to make and maintain healthy relationships with others (Burton, 2007; Hooper, Tomek, Bond, & Reif, 2015; Garber, 2011).

The experience of childhood adultification has been a concern for researchers and practitioners alike, particularly for children and adolescents in disadvantaged families, although there is a lack of consensus regarding whether the experience is always damaging to children. Several studies on the consequences of childhood adultification have suggested that childhood adultification is a harmful experience for children and adolescents (Weisskirch, 2010; Oin, Way, & Mukherjee, 2008). The experience of childhood adultification has been demonstrated to alter children's development by precluding them from experiencing "normal" trajectories during their childhood and adolescence while also extending the negative impacts on children's development after they enter adulthood (Hooper, 2007). It has also been suggested that childhood adultification affects intimate relationships with family members in later life (Hooper, 2007).

The idea that childhood adultification experiences are deviant stems in part from the white middle class ideal that childhood is a prolonged and protected developmental period during which young adults should be shielded from adult responsibilities, and from social toxicity. According to Garbarino, "socially toxic environment is that the social world of children, the social context in which they grow up, has become poisonous to their development"

(Garbarino, 1998, p. 9). In addition, he also addressed that “[n]eighborhood-related stressors on parents and significant others in the lives of children often exert indirect but equally important influences on childhood outcomes” (Wandersman & Nation, p. 652). Hence, Garbarino (1995) indicates that children are vulnerable to negative impacts from our increasingly socially toxic environment, which is seen as poisonous to child development. Socially toxic environments can be easily found within cumulated disadvantaged families, including families of lower socioeconomic status and those who reside in poor neighborhoods (Wandersman & Nation, 1998). The living environments and conditions of many immigrant families demonstrate characteristics of socially toxic environments, as described by Wandersman and Nation (1998). These include lack of privacy between family members due to limited space or badly constructed houses that result from family economic hardship. Thus, as a result of cumulative disadvantages, there is an increased likelihood that children may obtain adult information or experience parental conflict and marital discord within the family (Burton, 2007).

Recent challenges to the idea that adultification is inherently pathological involve articulating the need to consider various adultified experiences within more diverse cultural and family contexts. For example, sociologist Linda Burton (2007) proposed a conceptual model to demonstrate how childhood adultification emerged from disadvantaged families (such as economically disadvantaged families and immigrant families). The model considered adultification within the context of family and cultural diversity, such as variations resulting from different ethnicities, single-parent families, and families with mental illness or alcohol or drug problems. Burton’s (2007) conceptual model not only shifted perspective away from the pathologized standpoint of viewing childhood adultification as inevitably detrimental and negative for children and adolescents, but also proposed four successive forms of adultification,

which will be described later when I discussed adultification and related constructs on page ten, to identify the pattern and format of childhood adultification experiences. Burton (2007) also discussed the consequences, including the benefits, of experiencing childhood adultification, taking family culture and context into consideration.

The purpose of this study is to examine the impact of childhood adultification on emerging adults within the context of Chinese immigrant families. Asian immigration is both widespread and impactful with respect to family life in the United States. About 36 percent of new immigrants in the U.S. in 2010 identify themselves as Asian, as compared with 31 percent who identify as Hispanic (Pew Hispanic Center, 2011; 2013). This study is designed to give a better understanding of the unique processes and behaviors of adultification among recent Chinese and Taiwanese immigrant families. The study aims to examine the relationships between acculturative stress, adultification experiences, family obligation attitudes, and the psychological distress and well-being of offspring in Chinese and Taiwanese immigrant families. For the purpose of the present study, recent Chinese immigrant families are defined as those families in which parents migrated from their home country (China or Taiwan) and resettled in the United States with first- or second-generation college-aged children.

### **Background and Significance**

The use of “Chinese” and “Taiwanese” involves complicated identity and political issues due to the historical background of Taiwan and the relationship between Taiwan and China (Gu, 2006). Nevertheless, when it comes to culture, people who identified as Chinese in origin include Taiwanese, overseas Chinese and Taiwanese, and those of mainland Chinese origin; all are influenced by traditional Chinese culture that is largely based on Confucian principles and values (Gu, 2006; Tu, 1994). Therefore, given the similar and shared familial and cultural emphasis on

filial piety and family interdependence among people who are of Chinese origin, in the following discussion, the terms Chinese immigrant families and offspring will be used to refer to *both Chinese and Taiwanese* immigrant families and offspring (Bhattacharya & Schoppelrey, 2004; Gu, 2006).

According to the existing literature, more recent Asian immigrants who come from Southeast Asia, where most Chinese and Taiwanese immigrants come from, report higher levels of acculturative stress and family conflicts between parents and children (Lee, Choe, Kim, & Ngo, 2000). These resettlement and acculturation issues are likely to result in a higher risk of childhood adultification among immigrant children when compared with U.S. born families and Asian immigrant families with multiple generational status (Lee et al., 2000; Jurkovic et al., 2004).

Among Chinese immigrant families, there is a strong sense of family identity that involves honoring one's family and fulfilling family responsibilities. Chinese, and Asian societal perspectives in general, view the fulfillment of family obligations and parental expectations as ways to honor the family as a whole (Bhattacharya & Schoppelrey, 2004; Park, 2005). Within Chinese and other collectivistic cultures, there is often a strong sense of family obligation, with an emphasis on a duty to assist and support the family in order to fulfill the needs and desires of the elders. Among Chinese immigrant families, except for caring for younger siblings and responsibility for household chores, family obligations often also include language and cultural brokering behaviors that require children and adolescents to act as translators for their parents (Weisskirch, 2010; Hua & Costigan, 2012). Thus, the social context of Chinese and other immigrant families from collectivist cultures (such as Asian, Middle Eastern, and Latino) is an environment in which children grow up knowing that they have to adhere to the specific

developmental and personal expectations of their families (Park, 2005). Therefore, children are required to take on multiple roles, both family oriented and individual, to fulfill the daily needs of their families. These collectivistic expectations within Chinese families are considered to be central to successful achievement in adulthood and a means to gain social acceptance in the U.S.

Western discourse pertaining to childhood adultification defines filial expectations and the enactment of family obligations stemming from immigration in somewhat negative terms in that children are *encumbered* by adult responsibilities. It is unclear how enacting adult-like roles and responsibilities influences offspring in Chinese immigrant families given cultural understandings in Chinese society that put a high value on filial piety and the interdependence of family members. Normative and accepting attitudes about the roles of children in carrying out critical family obligations may serve as protective factors in terms of how stress may connect with adultification experiences, or perhaps, have bearing on how adultified experiences influence psychological outcomes. Childhood adultification studies have largely come from a predominantly westernized viewpoint that defines childhood as a time that is largely free of family obligations and caretaking. While children of American families learn to view the world based on an individualistic view, children of Asian families, in particular Chinese families, learn to see the world from the standpoint of networking and interpersonal relationships (Chao & Tseng, 2002). Thus, it is not uncommon among Chinese families to address the importance of filial piety and family interdependence. Children grow up recognizing their obligations to other family members, to their parents, and to the entire families; children are taught and socialized to prioritize family goals and matters over personal needs and goals (Chao & Tseng, 2002). This collectivistic viewpoint is different from the western view. Therefore, the individualist perspective may inadvertently pathologize family assisting behaviors such as caretaking for

younger siblings and performing household chores that are more common among Chinese immigrant families.

The present study targets Taiwanese and Chinese immigrant families to further our understanding of the issues of culture and childhood adultification for this particular ethnic group. Moreover, immigration is a unique context in which to consider the intersection between culture and adultification processes because research (Oznobishin & Kurman, 2009) shows that family members of immigrant families experience tremendous changes in their lifestyles and are required to adapt to new environments. Thus, immigrant children and adolescents are expected to play more dominant roles and take on parental responsibilities within their households while receiving much less parental support compared to their native-born counterparts (Oznobishin & Kurman, 2009). Hence, in addition to the myriad stressors that may contribute to the potential for adultification within the family (such as unemployment or parental inadequacies), acculturative stress, defined broadly here as the difficulties and stressors immigrants face in response to a series of life events that arise during the process of acculturation (e.g., language barriers, social isolation, and racial discrimination), is common to the lives of most immigrant families and is linked to poorer mental and physical health among immigrant families (Chan & Leong, 1994; Rudmin, 2009).

### **Theoretical Framework**

In the following, I will introduce and discuss theoretical underpinnings guiding the present research and specifically the process model advanced in Figure 1. Theoretical threads shaping this research include the adoption of Burton's (2007) conceptual model of childhood adultification, the application of life-course theory, and family stress theory.

Burton's conceptual model of childhood adultification provides the premise defining adultification as a process mechanism contributing to young adults' mental health outcomes, as well as for examining cultural attitudes and how they may influence adultification experiences among immigrant families. Life-course theory offers a good explanation of the interlocking life experiences among family members of Chinese immigrant families with its unique historical and cultural context. Further, it provides a good framework for addressing how Chinese immigrant young adults experience the transition of entering adulthood over the course of time. Family stress theory (Conger, Cui, Bryant, & Elder, 2000; Patterson, 2002) first frames acculturative experiences as potentially stressful for Chinese immigrant young adults, and, second focuses on intervening psychological and relational stress and resilience processes as articulated in the conceptual model guiding the study.

### **Adultification theory.**

#### ***Burton's conceptual model of childhood adultification.***

In addition to most of the prior definitions of childhood adultification that have been used within the Western cultural context, Burton (2007) provides a more recent, context-specific, and ethnically inclusive conceptual framework of childhood adultification. She explains that childhood adultification involves the incorporation of contextual, social, and developmental processes where children and adolescents are often prematurely or inappropriately exposed to adult knowledge or are expected or assigned to take on one or multiple adult roles and responsibilities within families (Burton, 2007).

Studies also suggest that the transition to adult-like family roles for children and adolescents are driven differently either by the necessary dependence of parents on children in



order to meet family survival needs, or by parents' limited options and resources for providing appropriate parenting that may encourage the occurrence of childhood adultification. The multiple and cumulative disadvantaged family conditions that are commonly faced by parents and children of immigrant families include living in low-income communities where children are likely to witness violence and drug use, their undocumented immigrant status, or low educational attainment and poor English proficiency (Baca Zinn & Wells, 2000; Burton, 2007). Further, even though Chinese immigrant families who migrated to the U.S. after 1985 have better financial resources and higher levels of parental educational attainment, childhood adultification can still be easily found in disadvantaged Chinese immigrant families, where these families lack familial and social support or experience discrimination and stigma due to their race and immigrant status (Bernard, 2010; East, 2010).

The financial, human, and social capital sustained by immigrant parents in influencing the occurrence of childhood adultification is a powerful phenomenon as these three factors are highly associated with the health status of parents, parenting skills, and the development and well-being of immigrant children. Adultified behaviors of children and adolescents are related to birth order (the eldest child having more responsibilities), physical and psychological health status, English language proficiency, citizenship status, maturity (readiness), gender roles embedded in traditional family culture, and the perceptions and understandings of family conditions (Burton, 2007; East, 2010; Jones, Trickett, & Birman, 2012; Park, 2005; Valenzuela, 1999).

Adultified behaviors vary in degree among offspring of immigrant families depending on their exposure to precocious adult information, the length and density of undertaking adult-like

responsibilities, and the structure of family dynamics and boundaries (Burton, 2007; East, 2010; Fuligni, 2001; Garber, 2011; Jones et al. 2012; Park, 2005; Valenzuela, 1999).

***Adultification and related constructs.***

Family scholars employ different terminology to describe conditions when children and adolescents take on adult-like responsibilities for family functioning and the restructuring of family hierarchy among immigrant families. Role reversal, language and cultural brokering, parentification, and adultification are common terms that are used in this research.

In the following paragraphs, I will make distinctions in the existing terminology and explain why the term, adultification, will be used for the present study.

*Role reversal* can be defined as the situation where children take on parental responsibilities that exceed the normal developmental path for children (Maysless, Bartholomew, Henderson, & Trinke, 2004). However, the concept of role reversal is ambiguous because it may also be used for cases of gender role reversal between couples to describe the transition and adaptation of family labor division, gender role assignment (provider or caregiver role), and work and family conflict in the family (Min, 2001). These circumstances refer to cases like stay-at-home dads and working moms, or adult children parenting their aging parents. Therefore, “role reversal” may not solely explain adultification experiences and it does not depict the concept of the expressive or emotional forms of adultification, such as peerification and spousification, which will be discussed further (Colapinto, 1991; Burton, 2007; Hooper, 2007). Thus, to avoid unnecessary confusion and further clarification, we use adultification rather than role reversal in the present study.

The phrase *cultural and language brokering* is widely used in the literature when discussing child and adolescent adultification in immigrant families (East, 2010; Jones et al.,

2012; Valenzuela, 1999). The term brokering behavior is much more commonly used in the context of cultural assimilation and language translation among immigrant families, whereas adultification experiences may involve children and adolescents in tasks other than language translation, housekeeping, and sibling caretaking. The concept of adultification may include not only the instrumental tasks that children take on, but may also require children and adolescents to become confidants (emotional supporters) of their parents.

However, regarding the term, parentification, there are fewer or less obvious distinctions between *parentification* and *adultification* in the literature. Burton's (2007) conceptual model differentiates between these two terms within a successive pattern that considers parentification as the highest level of adultification. Therefore, from Burton's standpoint, parentification is a type of adultification. Nevertheless, Garber (2011) views parentification as a role corruption between parent and children, whereas adultification is characterized as peerification or spousification in his definitions. In addition to Burton's and Garber's differentiations, still other researchers use the term parentification to refer to a type of boundary distortion and inverted hierarchy between parents and other family members in which children or adolescents take on peer-like, spousal, or caretaking roles in fulfilling the needs of parents and families (Hooper et al., 2012; Perrin, Ehrenberg, & Hunter, 2013).

Among all definitions of adultification and parentification, although the distinctions are varied and at times ambiguous, Burton provides the most complete set of distinctions for separating these two terms in describing different forms and levels of adultification. Therefore, adultification will be used for the present study.

Among various forms of adultified behaviors and adultification experiences, instrumental and emotional forms of adultification are discussed in the literature (Jurkovic, 1997; Weisskirch,

2010). As to instrumental adultification, which refers to behaviors such as managing the household and caretaking for siblings, several family systems theorists suggest that this form of adultification is less detrimental to children (Weisskirch, 2010). Children who experience more instrumental adultification serve the role of relieving parents' stress and anxiety as well as easing familial dysfunction. In addition, the experience of instrumental adultification may produce a sense of accomplishment and contribution among adultified children. However, if such adult-like responsibilities (e.g., caretaking for siblings or adults within the families and doing household chores) go on indefinitely and are unrecognized within the family, adultified children are more likely to experience negative outcomes (Hooper, 2007).

Research (Colapinto, 1991; Hooper, 2007) also indicates that emotional adultification, which refers to providing comfort and support to other family members or involvement in mediating family conflicts without parental supervision, is almost always destructive to children, adults, and the entire family. It cannot be considered a solution for family adaptation. In relation to the detrimental effect of emotional adultification on the child, becoming the confidant of their parents, when combined with an ongoing and indefinite period of emotional adultification, may cause negative risks and psychological consequences to adultified children. The emotional or expressive forms of adultification described above can be referred to as forms of spousification and peerification, according to Burton's (2007) conceptual model.

The present study strives to reframe adultification experiences away from pathologized diagnoses as defined by Western culture. Hence, the study pays more attention to how Chinese family context influences the functioning and development of individual and family when facing multiple stressors.

### **Family stress theory.**

While the concept of stress was first introduced into family studies by researchers examining impacts of the 1930s great depression, researchers addressed that individual and family adaptation is influenced by the perceived stressors, the perception of the situation, and the resources or coping strategies available for individual or families to deal with the stress (Hill, 1949). Other researchers indicated that families generally operate on a predictable normal cycle and anticipate and accept a sequence of events that will occur throughout the life course. When stressors and life events disturb the family equilibrium, the coping of family members and the families is required for regaining homeostasis and maintaining families in a stable functioning dynamic (McCubbin & Patterson, 1983).

Apart from the traditional view of family stress theories, more researchers in the past two decades started to consider that families are resilient when encountering challenges and stressful life events. The perspective of discussing stress and coping within families have shifted from deficit and pathology views to the emphasis on family strength and resources, in which researchers and practitioners pay more attention to positive mental health and wellness adjustment and functioning of the families (Patterson, 2002). Therefore, the Family Adjustment and Adaptation Response (FAAR) Model was proposed to extend and refine the Double ABCX Model (McCubbin & Patterson, 1983) to describe the linkage between family stress theory and a family resilience perspective (McCubbin & Patterson, 1983; Patterson, 2002).

The emphasis of the FAAR Model is to depict the active processes when families are trying to cope with family demands with assigned family meanings from its members based on the family capabilities and resources in achieving family well-adjustment and adaptation for stable functioning (McCubbin & Patterson, 1983; Patterson, 2002). Family demands include normative and non-normative stressors, ongoing and unresolved family strains, and minor

disruptions and hassles in daily life, which may have some obvious parallels between risk factors. Family capabilities include coping behaviors as well as the instrumental and psychosocial resources that the family has access to, which often share similar characteristics with protective factors. Researchers suggest that when identifying family demands and capabilities in addition to risk and protective factors before and during adjustment and adaptation processes, multiple structural systems within multi-layered ecological contexts where the families are situated should be considered and included for discussion (Patterson, 2002).

Patterson (2002) indicated that family meaning (definition attached to family demands and capabilities and the identity and worldview of the family) is an important construct of the FAAR Model. Boss (2002) also addressed the need to take account of the cultural and familial contexts of where the families reside to understand why and how families are stressed and how families respond to stress. Their suggestions reminds us that we need to carefully consider the racial, cultural, and familial variations when these differences may produce a wide range of family relational patterns that can contribute to different levels of family competences (Boss, 2002; Patterson, 2002). Hence, the emphasis of modern perspectives of family stress theory will be applied to the present study and guide our understanding about how Chinese immigrant families respond to the demands and stressors. The family stress and resilient perspectives will underpin the exploration of how Chinese immigrant young adults and their families define the demands they face (e.g., acculturative stress), how they perceive and define their coping behaviors when using their accessible family capabilities (e.g., parental capitals, family income levels; children who are more mature and have better language proficiency) within their Chinese family culture (e.g., family obligation attitudes) for the well adjustment and adaptation of family functioning.

Thus by incorporating elements of family stress theory described above, the theoretical model of the present study highlights the influence of cultural processes on adultification experiences and child outcomes. “Culture” was investigated in terms of offspring attitudes toward carrying out family obligations, which is the expectations derived from the traditional central values within Chinese families (Yeh et al., 2008). Attitudes toward family obligations among young adult offspring in Chinese immigrant families were specifically measured to assess their potential moderating effect on childhood adultification experiences and their mediating influences on the young adults’ psychosocial well-being.

In addition to considering the role of culture, family stress theory also highlights the role of contextual factors and economic stress on developmental outcomes. For example, The Family Stress Model (FSM) was intended to explain how stressful events influence the development and well-being of family members, and its focus on the influences of economic hardship on children’s emotional, cognitive, physical, and behavioral development is consistent with the aim of present study (Conger & Donnellan, 2007; Elder, Nguyen, & Caspi, 1985). Conger and his colleagues (2007) adapted the family stress model to explain how financial problems influence the lives of families, and they suggest that economic hardship leads to pressure on the family and thus affects individual adjustment to family stressors and overall family functioning. According to Conger’s iteration of the family stress model, the experience of heightened levels of economic pressure predicts the likelihood that parents are at risk for emotional distress, and thus facilitates the emergence of behavioral problems via parenting behavior that may influence the development and well-being of children (Conger et al. 1992; Conger & Donnellan, 2007).

In the present study, family context refers to demographic characteristics such as gender, generational status, family structure, and socioeconomic status (i.e., family income and parents’

educational attainment) of Chinese immigrant families. Family stressors are defined as stressful events during the acculturation process, such as perceived acculturative stress (e.g., limited language proficiency and racial discriminations) within immigrant families (Jurkovic et al., 2004; Conger, Wallace, Sun, McLoyd, & Brody, 2002). Child development and overall well-being refers to the psychological distress (i.e., depressive symptomatology and anxiety) and well-being of the children within Chinese immigrant families.

### **Life course theory.**

Elder (1974) is one of the pioneers who had been trying to explain family development from a social historical perspective for organizing and arranging the transitions and life events over the life course of the families. These life transitions or trajectories of life events are embedded in history, and societal alterations respond to the life of the individuals and their family contexts reciprocally. Regarding the discussion and application of life course theory, four principles must be addressed: the timing and space of the transition and life events, the linked lives between family members, the human agency of decision making, and the interplay between human lives and historical times (Bengston & Allen, 1993; Elder, 1994).

According to the propositions and summaries of Elder's work (1994, 1998), a tenet of multiple timing and space refers to individuals' life events or transitions that may occur in different times at different ages (e.g., early, late, delayed, or even absent) which create unique passages or trajectories for each individual or family. The principle of linked lives refers to the interlocking characteristics of one's life experience that will shape or are influenced by others because family influence is multidirectional and reciprocal (e.g., child development is tied to parents' lives and status, and children's characteristics may in turn affect parenting behaviors) (Bengston & Allen, 1993). In addition, the principle of human agency of decision-making



indicates that individuals' abilities enable them to make their own decision. These abilities can include their skills, knowledge, resources, and social networking to help them manage the relationships with others, to play various roles, to perform behaviors and to react to environments under the familial culture or the climate of larger society (Elder, 1994, 1998). The tenet of the interplay between human lives and historical times tries to address the intersections between social historical context and personal life events that an individual experiences over the course of time (Bengston & Allen, 1993; Elder, 1994, 1998). Life course theory helps situate the focus on young adulthood, and how earlier familial experiences come to bear on mental health outcomes during this developmental period.

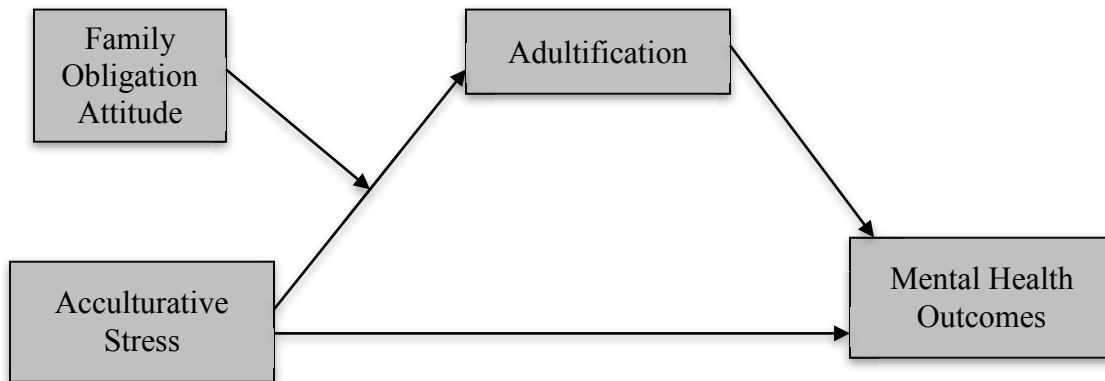
As discussed previously, while Burton's (2007) conceptual model provides a framework for helping to theorize the construct of adultification, the interactionist model is able to depict the processual relationships among Chinese immigrant families by incorporating the possible impacts of family context, social position, and the stressors of the family on the well-being of immigrant offspring. Here, I will discuss the combination of the family stress model, modern perspectives of family stress theory, and life course theory.

The integration of these theories may best describe the adultification experiences among immigrant families by incorporating the following constructs. The potential influences of social-historical context (e.g., immigration policy) and generational effect (e.g., generational status) on individuals and families define stressors (e.g., acculturative stress) based on family culture (e.g., emphasis of family interdependence). Individuals and families employ various coping strategies based on the accessibility of family resources (e.g., parental capital and family income level) to achieve sufficient adjustment and adaptation for family functioning. However, the coping strategies may or may not have impacts on the mental health status of immigrant offspring (e.g.,

psychological distress and well-being). In addition to the constructs listed above, the linked lives and human agency principles are able to capture how family culture and expectations as well as parental capital and family stressors shape the lives and well-being of Chinese immigrant young adults over the course of time.

Informed by the discussed theoretical frameworks, the present study tests a conceptual model of how acculturative stress may connect with childhood adultification and directly and indirectly impacts the mental health of young adults. Both acculturative stress and adultification are conceptualized in the current study within the context of Chinese culture via young adults' attitudes toward family obligations.

*Figure 1* Conceptual Model



*Note.* Mental Health Outcomes: Depressive symptomatology, Anxiety, and Psychological Well-being

Figure 1 represents a process model of acculturative stress, adultification, and mental health outcomes among Chinese young adults and serves as the basis for hypothesis testing. In addition, family obligation attitudes are included in the process model to further examine its potential moderated effect on the relationships between acculturative stress and adultification experiences among Chinese immigrant young adults.

Based on the conceptual model, the present study will test the following hypotheses:

1. Acculturative stress is predictive of more frequent adultification experiences among Chinese immigrant offspring.
2. Acculturative stress is predictive of higher levels of depressive symptomatology and anxiety, and is also predictive of lower levels of psychological well-being among Chinese immigrant offspring.
3. Adultification experiences may contribute to higher levels of depressive symptomatology and anxiety, and is also predictive of lower levels of psychological well-being among Chinese immigrant offspring.
4. Traditional family obligation attitudes (i.e., respect and commitment to family) will moderate how Chinese immigrant offspring perceive their adultification experiences; adultification experiences will mediate the effect of acculturative stress on depressive symptomatology, anxiety, and the psychological well-being of Chinese immigrant offspring (Figure 1).

In the present study, I assess whether the offspring of Chinese immigrant families demonstrate higher levels of depressive symptomatology and anxiety as well as lower levels of psychological well-being as a result of acculturative stress, whether acculturative stress contributes to adultification experiences during their childhood or adolescence, and whether acculturative stress impacts young adults through their experiences of adultification (mediated by adultification experience). Also, the study aims to determine if family culture (traditional, collectivist attitudes toward family obligations) is a protective factor with respect to adultification. That is, do traditional Asian values of filial piety in treating and caring for parents with great respect, the commitment of providing for family continuity, and bringing honor and

glory to and making sacrifices for their families influence how Chinese immigrant offspring define and perceive adultified behaviors and responsibilities that have been adopted for the needs of the family (Chao & Tseng, 2002)? The process model presented in Figure 1 permits the exploration of the moderating role of family obligation attitudes on adultification experiences when adultification's theorized mediating role has a mechanism effect (i.e., is a mediator) on the impacts of acculturative stress on psychological distress and levels of psychological well-being among Chinese immigrant offspring.

## **CHAPTER TWO**

### **Literature Review**

Chapter two introduces the historical background of childhood adultification, describes contextual factors that relate to childhood adultification, depicts the context and culture of Chinese immigrant families, and explains the relationships between childhood adultification and family stressors, attitudes toward family obligation, and the psychological distress and well-being of Chinese immigrant offspring. This chapter will also discuss the consequences of adultification experiences on identity formation on Chinese immigrant young adults entering adulthood.

#### **Historical Background of Childhood Adultification**

There has been a historical evolution and transition in the meanings of childhood based on how people view and interact with children in modern society. There have been significant transitions in attitudes regarding the meaning of childhood since the time when people considered children as the property of the parents, specifically fathers, and times when parents were expected to speak on behalf of their children. Childhood was often harsh and difficult when children were viewed as miniature adults, because of child labor expectations and other family responsibilities. From the medieval period to the period of Western industrialization in the 19<sup>th</sup> century, perspectives on childhood have changed. Contemporary perspectives on childhood generally see it as a protected period of time that is relatively carefree (Garbarino, 1995). Unlike the past, children are seen as individuals to be nurtured and developed under the caring guidance of adults (Burton, 2007; Santrock, 2011). While child labor and the view of children as the property of adults still exists in many cultures, according to contemporary Western cultural

perspectives, children should not have to take on adult responsibilities or undertake adult roles. Therefore, the idea that children should play adult roles, be responsible for contributing to household finances, and provide care for younger siblings, parents, and infirm elders, is considered to be a non-normative developmental path for children and adolescents (Burton, 2007).

Researchers have indicated that familism, defined as the subordination of personal interests and priorities of an individual to the values and demands of the family, is an important framework when studying Asian immigrant families. Asian families are usually highly familistic, and participation rates in familial interactions and behaviors within kin networks are enduringly present. In the case of the Chinese, this is largely due to Confucian philosophy, which emphasizes hierarchical relationships between rulers and subjects and patriarchal relations in families (Ishii-Kuntz, 2000; Zhou, 2009). Familism emphasizes virtues of filial piety that cultivate the norms of respect for the elderly and reverence for established traditions and male authority (Ishii-Kuntz, 2000). In addition, the collectivist family arrangement is considered a typical feature of Asian populations, and there is a strong tendency to emphasize family obligation, assisting behaviors, and togetherness to produce a tight kinship structure that is typically qualitatively different from that of Caucasian Americans (Baca Zinn & Wells, 2000). Among Chinese immigrant families, filial piety and shared household duties are greatly emphasized when compared to Caucasian American families (Yeh et al., 2008). Chinese immigrant adolescents often report more time spent on family duties, obligations, and family time and togetherness (Yeh et al., 2008). Hence, the familial ideologies adopted by Asian immigrant families suggest that children's assisting behaviors for the functioning of households have not been considered negatively within Asian immigrant families.

The literature is inconsistent about the outcomes and consequences of childhood adultification on the development and psychological well-being of children and adolescents. There are also mixed opinions about the outcomes of adultification on children and adolescents in immigrant families. Some research indicates that brokering or adultified behaviors may become a burden for immigrant children and may damage their psychosocial and emotional well-being (Weisskirch, 2010). Other research suggests that childhood adultification may be a positive experience for immigrant children and adolescents because they may have better academic performance and be more mature and more responsible compared to their counterparts (Fuligni et al., 1999).

Despite the fact that children who exhibit more family assisting behaviors than other children at their age may be better prepared for entering adulthood (Buron, 2007), researchers also find detrimental effects of fulfilling family obligations on child and adolescents' social and psychological well-being among Asian immigrant families (Fuligni et al., 2009). Due to pressures to fulfill family obligations, such as receiving higher educational and occupational attainment for successful upward social mobility (Chase, 1999; Garber, 2011; Park, 2005), potential consequences for these children may include unhealthy development patterns and potential pathologies. For example, immigrant children or adolescents usually have difficulty balancing academic demands and blending in or assimilating into peer culture at school while assuming the roles of translator and caretaker for parents or siblings; they also have trouble fulfilling family responsibilities and obligations (Yeh et al., 2008).

### **Demographic Characteristics Related to Childhood Adultification**

According to existing literature, an array of contextual factors are associated with childhood adultification and may also have bearing on how family stressors influence individual

and family well-being over the course of time (Bernard, 2010; Burton, 2007). The literature suggests that the context and culture of families, such as family income levels, parental educational attainment, and children's birth order and gender, are related to the occurrence of childhood adultification. The following paragraphs will explicate the relationships between these contextual factors and the adultification experiences of Chinese immigrant offspring.

### **Birth order and gender.**

Due to the emphasis on position and rank or order within the family among several non-western ethnic groups, the eldest child is required to take on more familial responsibilities than their younger siblings. In addition, research shows that these language and cultural brokering behaviors are likely to carry over into adolescence and adulthood for the eldest child (Weisskirch, 2010).

Further, according to several studies (Fulgini, Yip, & Tseng, 2002; Fulgini & Zhang, 2004; Tseng & Fulgini, 2000; Weisskirch, 2010), girls usually tend to take on more responsibility and are more likely to develop a sense of family obligation that may include the fulfillment and engagement of adultified behaviors. Unfortunately, some of the literature suggests that a higher sense of family obligation is related to poorer academic performance, the loss of peer engagement, and a higher dropout rate among some racial ethnic groups.

Research indicates that cultural values may assign different prescriptive roles for boys and girls based on various family culture and gender values (Weisskirch, 2010). Thus, gender ideology and family culture may also shape adultification experiences differently among immigrant boys and girls. Their interpretation of the adultification experience may be positive or negative based on the culture, gender values, and ideology within the families (Weisskirch,



2010). Thus, the perceptions of children and adolescents about adultification may differ depending on individual cultural values and family context.

### **Number of siblings.**

Downey (1995) proposed that based on the assumption of the dilution model for family resources, there are limited parental resources in terms of time and energy for the family. As family size increases, the time and energy received by each child within the family decrease. Therefore, as the size of family increases while parental resources remain the same, children with more siblings tend to receive less time and care from their parents (Bernard, 2010; Downey, 1995). In addition, research also shows that adolescents who have more siblings tend to spend more time on doing household chores and caretaking younger siblings (Bernard, 2010; Bianchi & Robinson, 1997). Other researchers indicate that young adults with more siblings are assumed to take on more responsibilities and are assigned a greater workload within the family when compared with their smaller family size counterparts (Bernard, 2010; Gager, Cooney, & Call, 1999). Hence, adolescents in larger families are more likely to be adultified within the families. Thus, number of siblings should also be included as one of the important contextual factors when explaining the contribution and occurrence of adultification experiences.

### **Generational status.**

With respect to the impact of generational status on parenting behavior and children's adultified experience, researchers suggest that compared with parents of immigrant families, native-born children usually acculturate faster, better adapt to the host culture, and obtain comprehensive English proficiency faster (Fuligni, 2001; Jones et al., 2012; Park, 2005). Immigrant parents often struggle with preserving their original ethnic culture while adapting to the new culture, trying their best to be "good parents" by offering suitable amounts of financial, human, and social capital for their children in order to achieve upward social mobility for their

families (Fuligni, 2001; Jones et al., 2012; Park, 2005). Since the pace of acculturation between immigrant parents and children varies, immigrant parents are very likely to have difficulties in following up or communicating with native-born children for a variety of reasons, such as distinct cultural ideologies, language barriers, and lack of family time or parent-child interaction because of long hours of work. Both parents and children of immigrant families are subject to acculturative stress during the acculturation process. In this circumstance, parents not only fail to provide appropriate parenting but also need assistance from children or adolescents to help with coping with multiple family stressors, which increases the likelihood of adultifying their children (Fuligni, 2001; Jones et al. 2012; Park, 2005; Puig, 2002).

**Socioeconomic status, parental capital, and family income level.**

Socioeconomic status could also be an indicator and predictor of childhood adultification experiences. In particular, research has indicated that socioeconomic disadvantage is associated with increased likelihood of experiencing childhood adultification (Bernard, 2010; Burton, 2007).

Additionally, parental capital refers to the parental employment status, educational attainment, occupational achievement (e.g., family income level), and social networking skills and resources. Thus, parental capital is considered to be another aspect of socioeconomic status for the family (Burton, 2007; Conger & Donnellan, 2007). Parental capital is highly tied to the developmental patterns of children and adolescents among immigrant families. Several researchers also indicated that low family income status is associated with higher frequency of caretaking behaviors and adult-like responsibilities among young adults in economically disadvantaged families (Burton, 2007; Roy, Messina, Smith, & Waters, 2014). Further, parental educational attainment and employment status contribute to family financial status and are very likely to rearrange the household labor division and childrearing responsibilities within families (Baca Zinn & Wells, 2000). Under these rearrangements of family labor division and child

caring reassignments, children may be required to take on adult-like roles and responsibilities. Therefore, family income level may also be considered as a salient indicator of socioeconomic status of the families.

### **Chinese Immigrant Families**

As a result of the Immigration Act of 1965, which abolished certain immigration restrictions, the immigrant population in the United States experienced rapid growth, particularly of Latino and Asian immigrants (Hum, 2002; Takaki, 1990). Additionally, studies have found that total immigration in the U.S. sharply increased in the late 1990s and slightly declined as the economy went into a downturn after 2001, with the exception of 2004, when there was a slight uptick in immigration. The foreign-born population in the country is expected to grow in the future, however (Pew Hispanic Center, 2013).

In 2009, Eastern and Southeastern Asians made up the second largest Asian proportion of Asian population, and among these Asian countries, foreign-born people from China, Hong Kong, Korea, and Taiwan account for the major sources of the origins of Asian population (Batalova, 2011; Pew Research Center, 2013). Studies showed that prior to 1965, the first migration wave, Chinese immigrants have migrated from diverse geographic areas, including Taiwan, Hong Kong, China, Vietnam, and Singapore, which stretched immigrants' generational status from the first to the fifth or more generations (Park, 2005, p.28; Zhou, 2009, p.22). Thus, Chinese immigrants demonstrate more generational diversity and exhibit a variety of characteristics that differ from other ethnic minority groups in the country.

Chinese immigrants initially resettled on the West Coast in 1850s, where they found jobs as railroad workers, miners, farmers, and domestic laborers, and Chinese immigrants have been

present in the state of California ever since (Wong, 1997, p.155). After the completion of the Central Pacific Railway in 1896 and the closing of many mining businesses, Chinese immigrant laborers and white workers were looking for other employment opportunities, which resulted in economic competition between Chinese laborers and white workers (Takaki, 1990; Wong, 1997). This competitive relationship, specifically in the state of California, led to a series of discriminatory legislation acts against the entry and reentry of Chinese immigrants. Further, this anti-Chinese legislation and these laws prohibited Chinese immigrants from working in federal, state, county, or city governments, and children of Chinese immigrant families were not allowed to obtain educations in public schools at the time (Hum, 2000; Wong, 1997). Chinese immigrants reacted to these laws and legislative acts by entering into businesses such as Chinese restaurants or laundries that were not directly threatening to white enterprises. Moreover, many of them moved to other major metropolitan areas in the state of California and the other U.S. states, including Los Angeles, San Francisco, and New York City (Wong, 1997, p.156). These metropolitan areas were able to attract large clientele for the survival and development of Chinese ethnic family businesses (Park, 2005; Hum, 2000; Wong, 1997, p.156). This is possibly the reason that Chinese immigrants tend to be most concentrated in the accommodation and food services sector (Bankston & Hidalgo, 2007).

Post-1965 Chinese immigrants, the newer Chinese immigrants who migrated during the second wave of immigration, also demonstrated diverse socioeconomic backgrounds. However, unlike first wave older Chinese immigrants who arrived with little money, low educational attainment, and from rural areas with few job skills, significant numbers of more recent Chinese immigrants come with considerable family savings and high levels of educational attainment, with professional skills and knowledge that allow them to enter higher-paying occupations such

as scientific and technical fields (Zhou, 2009, p. 23; Takaki, 1990; Wong, 1997). These new Chinese immigrants also tend to live outside of Chinatown and resettle in various metropolitan areas in addition to the ones mentioned above. These metropolitan areas include places like San Diego, Houston, Dallas, Boston, and Chicago (Wong, 1997).

As to the geographical distribution, the state of California still has the highest concentration of Chinese immigrants; the states of New York, Hawaii, Illinois, New Jersey, Texas, and the District of Columbia also have heavy concentrations of Chinese immigrants (Wong, 1997).

#### **Family obligations among Chinese immigrant families.**

A central aspect of culture shaping the family lives of Chinese immigrants involves their traditional, collectivist views toward family obligations. Family obligations can be referred to as a set of behaviors and attitudes involving the support and assistance provided by family members (Juang & Cookston, 2009). Among Chinese immigrant families, filial piety and sharing household duties are greatly emphasized as compared to Caucasian American families (Yeh et al., 2008). Also, Chinese immigrant adolescents report a higher amount of time spent on family duties and obligations in family gatherings (Fuligni, Tseng, & Lam, 1999).

More recent studies indicate that family obligation and assisting behaviors, including translating and caretaking behaviors for parents and siblings, may lead to generational tension, rebellion, loss of childhood and social life, and family conflict and resentments among Chinese immigrant young adults (Juang & Cookston, 2009; Zhou, 2009). However, studies also indicate that greater family obligation is associated with closer family relationships and better academic achievement among Chinese immigrant families (Juang & Cookston, 2009).

Therefore, it is important to take into account the central cultural value of Chinese family obligation and other contextual factors within immigrant families, including socioeconomic status, to interpret childhood adultification experience among Chinese immigrant offspring (Juang & Cookston, 2009; Yeh et al., 2008).

During resettlement periods after migration, immigrant children and adolescents must learn English in order to acculturate successfully into the host culture (Weisskirch, 2010). The emphasis in Chinese families on achieving successful upward social mobility in the U.S. through hard work and educational achievement is correlated with greater social acceptance in society as compared to other immigrant populations (Park, 2005; Takaki, 1990). Thus, the pursuit of upward social mobility for the entire family is obligatory for every family member. Chinese immigrant families emphasize family filial piety, hard work, and responsibility not only as part of the process of achieving success, but in general view the fulfillment of family obligations and parental expectations as ways to honor the family as a whole (Bhattacharya & Schoppelrey, 2004; Park, 2005; Zhou, 2009). Within Chinese and other collectivistic cultures, there is often a strong sense of family obligation, with an emphasis on a perceived need and duty to assist and support families.

Although adultification and language and cultural brokering behaviors are common experiences for offspring of immigrant families, the consequences and outcomes on psychological distress and well-being as well as on relationships with parents are mixed and uncertain (Hua & Costigan, 2012; Weisskirch, 2010). Some research suggests that language and cultural brokering and adultification experiences are associated with greater ethnic identity, higher self-esteem, more confidence and independence, more maturity and socialized behaviors, and closer and more trusting relationships with parents (Hua & Costigan, 2012). Other research;

however, indicates that language and cultural brokering and adultification experiences have negative repercussions for the emotional development and psychosocial well-being of children and adolescents (Hooper, 2007). Research has pointed out that the frequency of brokering behaviors and childhood adultification experiences is associated with lower self-esteem and feelings of family resentment. Therefore, the psychological outcomes of brokering behavior and adultification experiences vary greatly based on the existing literature (Hua & Costigan, 2012).

### **Family Obligation Attitudes and Childhood Adultification**

In modeling the effects of adultification on offspring in Chinese immigrant families, the examination of how family obligations are perceived by immigrant offspring based on the cultural context of their family may indicate different outcomes for adultification experiences. Family obligation attitudes refer to the individual's sense of duty to assist other family members and take family needs and wishes into account when making personal decisions (Fuligni & Pedersen, 2002). Among Chinese immigrant families, the needs for survival and functioning of the families may require parents to be adaptive and flexible to include children as co-parents or co-decision makers in the affairs of the family. In the native country, family boundaries and hierarchy may have remained clear and prioritized and yet due to the migration and limited family resources, parents become innovative and adaptive about the family structure and view children as assets for family functioning (Dorner, Orellana, & Jiménez, 2008; Weisskirch, 2010).

Within Chinese immigrant families, where family closeness and interdependence are greatly emphasized, family members usually feel more comfortable in seeking help from other family members and friends in their tight and close family networks (Yeh et al., 2008). They receive more support and assisting behaviors from their family members (Yeh et al., 2008). Based on prior research on values and expectations toward family duties as well as respect and

support for families, Latino and Asian young adults are found to demonstrate a stronger sense of family obligation (Fuligni et al., 2002). Young adults of both ethnic groups showed more respect toward elderly family members, were more inclined to follow parental advice, provide more support for the families, and stay closer to their families when compared with their Caucasian counterparts (Fuligni et al., 1999; Fuligni et al., 2002).

Hence, children and adolescents in Chinese immigrant families are also considered as family members who can provide support and assistance for other family members. Thus, children and adolescents may perceive adultification experience as necessary for the functioning of the family given its current circumstances (Bernard, 2010; Weisskirch, 2010).

According to the literature, Chinese immigrant adolescents report a higher amount of time spent on family duties, and they also spend more time with their families, which indicates that they value family closeness and togetherness greatly (Yeh et al., 2008). The research findings suggest that adolescent attitudes toward family obligations enhance the development of self-identity and provide a sense of purpose and direction during the process of acculturation (Fuligni et al., 1999; Fuligni et al., 2002; Yeh et al., 2008). Fuligni and his colleagues found that family obligation is positively associated with higher levels of emotional well-being; however, actual time spent on family assisting behaviors may also increase stress and anxiety on immigrant children (Fuligni et al., 1999; Fuligni & Pederson, 2002). Nevertheless, Juang and Cookston (2009) indicate that children and adolescents who support and assist their family benefit in multiple ways, including being more responsible and mature, developing a sense of pride through their contribution to their families, and enjoying more positive family relationships. Their study also suggests that family obligation might serve a protective role against depressive symptomatology among Chinese immigrant children and adolescents (Juang & Cookston, 2009).



Based on the above discussion of the literature, the influence of family obligation attitudes on how young adults perceive their adultification experiences are mixed. Further exploration and verification are undertaken in the present study.

### **Chronic Family Distress and Childhood Adultification**

According to the literature, childhood adultification is a type of structural arrangement for family adjustment and functioning when experiencing stressors. However, it is also likely to increase the number of both instrumental and expressive tasks assigned to the adultified child. In discussing the costs and benefits of adultification for children and adolescents, studies have suggested that the “child as cultural broker” is a form of adultification. The immigration process may place stress on the whole family. Both individuals and families need to deal with resettlement issues, such as securing financial resources, entering the new society, navigating new educational systems, and learning English, in order to successfully acculturate to the host culture (Weisskirch, 2010). Further, within immigrant families children usually master the new language faster than their parents and become translators for their parents. This means they have to speak on behalf of their families and are more likely to be adultified during the process of acculturation and resettlement (Weisskirch, 2010; Zhou, 2009).

Thus, chronic family distress is easily identified within immigrant families, including stress derived from the process of resettlement and acculturation after migration, stress caused by the acculturation gap between parents and children, the difficulties imposed by language disabilities, and the pressure of maintaining adequate financial resources for the family (Jankowski, Hooper, Sandage, & Hannah, 2011; Jurkovic et al., 2004; Titzmann, 2012).

Research suggests that acculturation and resettlement issues might result in overwhelming family distress on members within Chinese immigrant families (Lee, 1989).

Titzmann (2012) also indicates that conflict and stress between parents and children resulting from the acculturation gap can lead to adultification. Therefore, chronic family stressors are associated with a higher risk of experiencing adultification within immigrant families. Increased likelihood of adultification experience also occurs when there is a lack of reciprocity between parents and children within immigrant families (Jankowski, Hooper, Sandage, & Hannah, 2011). Children and adolescents may have increased chances of experiencing higher successive levels of adultification experiences when the family suffers from acculturative stress or other family stressors, and parents are unable to acknowledge the contributions of their children for the survival needs of the family and assign even more adult-like responsibilities to their children (Jankowski et al., 2011). These acculturative stresses include language barriers, acculturation gaps between parents and children, and racial discrimination. Other family stressors include unemployment, mental disorders, alcoholism, incarceration, and divorce (Jankowski et al., 2011; Jurkovic et al., 2004).

An array of stressor events are believed to contribute to the occurrence of adultification experiences within immigrant families, namely the inability of parents to adapt to the new situation and to achieve success for their families because of their limited English language ability, low parental educational levels, poor financial status, and acculturative stress (Jankowski et al., 2011; Jurkovic et al., 2004; East, 2010).

#### **Family stressors and childhood adultification.**

The acculturation process refers to a process of changes as individuals adapt to their new environments and learn to accommodate their native cultural practices and values to fit in the host culture (Buki, Ma, Strom, & Strom, 2003; Farver, Bhadha, & Narang, 2007). Titzmann (2012) suggests that immigrant adolescents and children who acculturate faster and outperform their parents socioculturally are more likely to develop an acculturation gap with their parents,

thus increasing the likelihood of performing adultified behaviors as compared to children from native Western families. Family members acculturate at different paces, which might create additional stress and potentially new areas of family conflict, further risking psychological distress on each member of the family (Jurkovic et al., 2004; Lau et al., 2005; Titzmann, 2012). The unequal pace of acculturation, especially between parent and children, is referred to as the “acculturation gap.” In addition, the acculturation gap is likely to create family conflict and disagreement between parents and children and thus subject immigrant family members to acculturative stress.

Acculturative stress may arise when individuals experience difficulties during their acculturation process, which may derive from incongruent cultural values and practices, language barriers, unequal pace of acculturation between parent and children, and discrimination from their minority status (Crockett et al., 2007; Titzmann, 2012). However acculturative stress may arise from other sources as well. Research indicates that acculturative stress is a proximal risk factor and is often associated with stressors of adjusting to a new cultural environment, including language challenges, loss and lack of social support, difficulty of finding jobs, non-acceptance, and discrimination by the host culture (Hwang & Ting, 2008). Additionally, several studies have suggested the association between acculturative stress and negative emotional developments (Barlow, 2002; Crockett et al., 2004). Still other research suggested that acculturative stress leads to negative psychological states such as anxiety and depression (Crockett et al., 2004; Williams & Berry, 1991). Hence, it has been viewed as a risk factor for maldevelopment (negative path of development) and maladjustment amongst Hispanic and Asian Americans (Jurkovic et al., 2004; Lau, et al., 2005; Titzman 2012).

Within Chinese culture, the inclusion of children as the brokers or co-decision makers within families may be adaptive for immigrant families who strive to acculturate and survive in the new culture. Therefore, children of Chinese immigrant families are likely to perform tasks that are typically assumed by parents or adults. Further, immigrant parents are more likely to treat their children as brokers, peers, confidants, and caregivers to maximize their family assets to cope with family stressors for family functioning as the families are experiencing acculturative stress during acculturation processes. However, assigning more duties and responsibilities to children when they are also experiencing family stressors (e.g., acculturative stress) simultaneously may result in myriad negative health outcomes on children of Chinese immigrant families (Dillon, Rosa, & Ibañez, 2013; Jurkovic et al., 2004; Titzmann, 2012).

Family stress is likely to occur when families encounter multiple family stressors such as acculturative stress (i.e., language barriers, family conflicts, social acceptance and discrimination issues, and financial difficulties) and thus is likely to increase the emergence of adultification among children of immigrant families as well (Hwang & Ting, 2008; Weisskirch, 2010). The increased occurrence of adultification experiences may be due to the fact that children and adolescents from immigrant families perceive the fulfillment of family assisting behaviors as necessary in accord with the stressful circumstances of the families (Weisskirch, 2010).

### **Mental Health Outcomes and Childhood Adultification: Psychological Distress and Well-Being**

According to Hooper and her colleagues (2015), childhood adultification is proven to have enduring effects on individuals' physical, relational, and psychological functioning over the course of time. Much of the empirical research has explained that negative outcomes correlated with adultification experiences include depressive symptoms, attachment disturbances across life span, personality disturbances, and anxiety (Hooper et al., 2015). Brokering behaviors and

adultification experiences may have negative repercussions for the emotional development and psychosocial well-being of children and adolescents, and the frequency of brokering behaviors and childhood adultification experiences is associated with lower self-esteem and negative feelings (Hua & Costigan, 2012). However, other research indicates that both Latino Americans and Asian Americans demonstrate positive psychological benefits after performing brokering and adultified behaviors (Fuligni et al., 2009; Hooper et al., 2015). Due to these inconsistent and mixed findings associated with the implication of adultification experiences on the mental health status among Chinese immigrant offspring, the following paragraphs will discuss the outcomes of adultification experiences based on two mental health constructs: psychological distress and psychological well-being.

**Psychological distress: Depressive symptomatology and anxiety.**

According to the literature, psychological distress refers to a nonspecific syndrome that may include several constructs such as depression, anxiety, anger or obsession-compulsion, irritability, and cognitive problems (Masee` et al., 1998). Psychological distress can also be defined as negative reactions of individuals toward their recent life challenges and difficulties (Masee` et al., 1998). Therefore, researchers suggest that the psychological distress construct should include myriad affective, cognitive, and somatic symptoms of individuals' ill-being (Masee` et al., 1998).

While somatic symptoms that are associated with physical consequences such as sleep disorder and loss of energy are considered components of the psychological distress construct, depression and anxiety are often considered the core symptoms of psychological distress (Masee` et al., 1998). Several studies have demonstrated that adultification experiences are somewhat destructive because they tend to alter the power dynamic of parent-child relationships and

endanger the balance and individuation of both parents and children among immigrant families (Garber, 2011; Titzmann, 2012; Valenzuela, 1999).

This altered power dynamic may be particularly problematic for Chinese offspring within the context of immigration and acculturation. For example, researchers indicate concerns about caretaking behaviors among immigrant children and adolescents, in which the maintenance of excessive family obligations may deprive them of opportunities for experiencing appropriate socialization (East, 2010).

Research also showed that children who are expected to perform caretaking behaviors and take on adult roles tend to demonstrate out with peers and establish positive relationships with others. Therefore, excessive caretaking is believed to be harmful and unhealthy signs of depressive symptomatology, anxiety, and lower levels of overall mental health (Bernard, 2010; Boszormenyi-Nagy & Spark, 1973). In addition, Burton's (2007) ethnographic and case studies indicate that adultified children and adolescents who are assigned heavy responsibilities may develop a strong sense of 'mattering' from the family and feel needed by their parents and families. However, these adultified children are likely to be at-risk of experiencing anxiety, depression, and compulsive caregiving behaviors for their families. Further, Garber (2010) also addressed that adultification experiences are likely to result in the development of depression, anxiety, anger, hyper-organization, and poorer relationships and social skills with others.

According to the discussion of the existing literature on the mental health consequences of adultification experiences among immigrant children and adolescents, signs of depressive symptomatology and anxiety are two frequent psychological distress outcomes of adultification experiences (Bernard, 2010; Burton, 2007; Chase, 1999; Garber, 2011). Given the literature pointing to the link between adultification and psychopathology, the inclusion of psychological

distress as an outcome of acculturative stress and adultification among Chinese immigrant offspring seems warranted. Hence, the present study includes these two psychological distress outcomes as the negative components of mental health outcomes.

Despite the predominantly negative findings, the impacts of adultification can be adaptive (Jurkovic, 1997). Adaptive adultification may emerge from family crises (e.g., immigration) and refers to cases where family members recognize, appreciate, and acknowledge children and adolescent contributions (Weisskirch, 2010). In contrast, with destructive adultification, children and adolescents are often overburdened by caregiving responsibilities and receive little or no acknowledgement and guidance for their work. Hence, parental reaction to child and adolescent adultified behaviors may be additive to the offspring's experience of adultification (Weisskirch, 2010). Given Chinese family values (i.e., filial piety and a collectivist family ethic), it may be that adultification is not as destructive as it may be in other cultural contexts. Therefore it is important to consider positive aspects of psychological functioning as potential outcomes of adultification.

### **Psychological well-being.**

Studies that highlight the negative effects of family obligations tend to contribute to a pathological view of childhood adultification. Hence, some researchers also argue that the measurement of the psychological distress construct can only demonstrate the negative dimension of mental health status. In addition, this negative dimension of mental health is only able to measure individuals' psychological distress in a short period of time (i.e., participants' reports are often given within one or two weeks) rather than providing a complete picture of people's long-term mental health status, which usually includes the reports of positive dimensions of subjective well-being. While psychological distress captures "the unique

discomforting, emotional state experienced by an individual in response to a specific stressor or demand that results in harm, either temporary or permanent, to the person” (Ridner, 2004, p. 539), the present study not only includes the distress outcome but also incorporates positive well-being as an outcome into the model. This is consistent with more modern iterations of family stress theory (Boss, 2002; Patterson, 2002) in that it acknowledges the importance of integrating resilience into models when examining stress and risk. Here we consider not only the negative effects of stress and adultification, but also examine variations in psychological well-being to consider adaptation and resilience. Psychological well-being is distinct from distress, and is a dynamic concept that includes subjective, social, and psychological dimensions; psychological well-being includes how people evaluate their lives (Diener, 2000). The concept of psychological well-being is not easy to understand, since it contains multiple dimensions and carries various meanings and thus is difficult to measure. Still, providing a solid operationalized definition to measure psychological well-being effectively for an individual is crucial (Warr, 2012).

According to Warr (2012), psychologists often define two concepts of well-being depending on the emphasis of the study. Most researchers agree that well-being consists of both cognitive and affective components. The cognitive component examines adaptation to aging and the affective component tests an individual’s overall emotional tone and states (Kafka & Kozma, 2002). In addition, an appropriate conceptual definition of psychological well-being is best provided when extending its scope to cover both positive and negative outcomes when examining an individual’s psychological well-being (Warr, 2012). According to Ryff’s (1989) definition of psychological well-being, the construct should include the examination of affective aspects (e.g., feelings, emotions, and depressive levels) and cognitive aspects (e.g., adaptation and satisfaction) of well-being. Ryff (1989) also suggests that the concept of well-being is best



defined as a multidimensional construct, which is made up of life attitudes and is not merely composed of life satisfaction and positive and negative affects (Kafka & Kozma, 2002; Warr, 2012).

When we look at the discussion of the findings on the mental health outcomes of adultification experiences, some researchers, such as Trickett & Jones, 2007, found that there is no clear evidence that the impact of adultification and cultural brokering behaviors among immigrant families is either harmful or beneficial on individual and family functioning. In addition, positive evidence of normalizing perspectives on childhood adultification, where adultification brings adolescents a positive experience and a sense of fulfillment and thus leads to higher family satisfaction, was discussed in studies conducted by Tse (1996) and Hafford (2010). Further, researchers also suggest that the experience of providing care and fulfilling family obligations may help to facilitate children's sense of maturity and their self-reliance, empathy, and personal growth. These findings of their studies indicate that both Asian and Latino immigrant children held positive perceptions of brokering and adultified behaviors. Another study (Orellana, Dorner, & Pulido, 2003) also addressed that brokering and adultified behaviors allow children to develop bonding and connections with their parents and culture of origin. Hence, these positive outcomes of childhood adultification suggest that children and adolescents who experience adultification may also report better psychological well-being although this premise has generally been untested in the literature given its focus on negative or pathological outcomes associated with adultification.

***Psychological well-being: Identity development and successful university adaptation in emerging adulthood.***

As previously discussed, the inclusion of life course theory helps situate a focus on emerging adulthood. Chickering (1969) identified various components that are considered crucial for successful identity formation and better adjustments when individuals enter college. These propositions include achieving a sense of competence, managing emotions, developing autonomy, interacting with others with increased tolerance, developing a sense of purpose, and having consistent beliefs. Among these requirements for successful identity development, establishing a healthy sense of self and developing autonomy are associated with the ability to function adequately as an individual and to separate and maintain autonomy from the influence of parents and families when entering adulthood (Chickering, 1969; Wintre & Yaffe, 2000).

By looking at the outcomes of adultification experiences among immigrant offspring, studies show that adultified experiences may better prepare individuals for the transition into adulthood. However, when it comes to psychosocial maturity, childhood adultification experiences may be somewhat destructive and may lead to confusion and contradictory expectations about entering early adulthood (Bernard, 2010; Roy et al., 2014). Study findings showed that adultified children and adolescents might possess clear opinions about being an adult and yet have an unsettled and fragmented identity, which leads to difficulties in transitioning into adulthood (Roy et al., 2014).

While some Chinese immigrant offspring may have a hard time living autonomously and may be constantly worried about the condition of their families while they are away (Titzmann, 2012; Checkering, 1969), others may experience stress and anxiety as they feel the need to be close to their families because they may very likely still perform key roles within the families (Bernard, 2010). Therefore, as one's individuation is highly related to one's development of autonomy and complete sense of self, overemphasis on familial interdependence within Chinese

immigrant families may make it more difficult for college-aged immigrant offspring to emancipate themselves from their families and to be away from their families (Bernard, 2010). Further, being unable to maintain adequate boundaries with their families and to become independent may also result in difficulties in establishing relationships with peers and in feeling isolated (Hayes & Lin, 1994). These may all increase stress in adjustment and adaptation to university life as the immigrant offspring transition into their early adulthood (Hayes & Lin, 1994; Wintre & Yaffe, 2000).

Attending university is transitional in the lives of young adults and poses a great deal of stress. Research shows that in addition to the stress derived from attending college and transition to adulthood, Chinese immigrant offspring likely face even greater stressors, such as acculturative stress, racial discrimination, and cultural conflict with parents, which may increase their chances of forming disoriented identity when entering university (Titzmann, 2012). Kállay and Rus (2014) suggest that successful adaptation leads to future flourishing, and thus unsuccessful adaptation and severe maladaptation may result in elevated negative emotions and various forms of physical and psychological disorders when transitioning into emerging adulthood.

## **Summary**

In conclusion, with respect to the literature related to childhood adultification, research findings have demonstrated both negative and positive effects of adultification experiences on the mental health outcomes of children and adolescents. As the recent research tends to move away from the pathological view of interpreting adultification experiences, the present study aims to consider the interplay of Chinese immigrant family culture and adultification experiences on both psychological distress and psychological well-being among Chinese immigrant offspring.

Although research suggests that the fulfillment of family obligations may lead to adultification and may contribute to psychological distress in children (Jones et al. 2012; Burton, 2007; Puig, 2002; Fuligni, 2001), young adults in Chinese immigrant families may hold distinctive family obligation attitudes based on their culture and beliefs, which may lead to different perceptions and interpretations of their adultification experiences. Therefore, it will be informative to gain a better understanding of perceived experiences of adultification among offspring of Chinese immigrant families, and how stress and adultification processes may connect with both psychological distress and well-being among Chinese offspring during emerging adulthood.

## CHAPTER THREE

### Methodology

This chapter discusses the research design, data collection procedures, operationalization of study constructs, instrumentation, and data analysis strategies for the present study. First, a series of preliminary analyses were executed to examine the conceptual and statistical properties of the variables included in the study. Second, a series of hierarchical multivariate regression analyses were executed to examine the degree to which demographic characteristics factors, acculturative stress, and adultification experiences explain variation in mental health among Chinese immigrant young adults. Three mental health outcomes were examined: depressive symptomatology, anxiety, and psychological well-being. It was theorized that predictor variables might reveal a different pattern of effects depending on the nature of the mental health outcome being studied. Third, a bootstrapped, bias-corrected regression based analysis was conducted to examine the process mechanisms that might be at play in explaining young adult Chinese students' mental health outcomes. This involved a moderated mediation analysis to test the conceptual model identified on page 69 and 108.

With regard to the examination of process mechanisms linking acculturative stress, perceptions of adultification, and mental health outcomes, a model of moderated mediation was tested (Figure 2) whereby family obligation attitudes (W) were theorized to intensify the effects of acculturative stress (X) on adultification (M) among Chinese immigrant offspring. That is, family obligation attitudes indicative of respect and collectivistic responsibility to family would enhance the strength of the relationship between stress and adultification (offspring under stress would therefore be more likely to report higher levels of adultification). Within this model, I tested whether acculturative stress exerted its effect on psychological distress and well-being (Y)

indirectly through childhood adultification experiences of Chinese immigrant offspring. In addition to testing the direct effects between all the observed variables, the focus of the study was to examine if the path from acculturative stress to adultification experiences of Chinese immigrant offspring is moderated by family obligation attitudes, and this hypothesized moderation effect occurs when their childhood adultification experiences mediate the effect of acculturative stress on the psychological distress and well-being of these immigrant offspring. Four hypotheses (see page 7) were tested by running this second series of regression analyses, which utilized a bootstrap approach based on the PROCESS macro (Hayes, 2009) to permit the testing of direct and indirect effects included in the moderated mediation model (Hayes, 2009).

### **Research Design and Pilot Study**

The methods and research design of the present study were informed by a pilot study on the implications of adultification on the experiences of Asian American young adults that was conducted by Chen, her colleagues, and a project supervisor (Dr. Joyce Ardititi) between January 31, 2012, and May 5, 2012. This pilot study was funded by an International Scholars Grant through the Department of Human Development at Virginia Tech.

#### **The pilot study: The implication of adultification on Asian American young adults.**

From February through May of 2012, as part of a research team experience in the Department of Human Development, the team developed and implemented a pilot study to examine levels of adultification and depressive symptomatology among Asian college-aged students. The research team planned to explore whether adultification is associated with depressive symptomatology for young adults. The pilot study also planned to examine if race differentiated levels of adultification and depressive symptomatology among college-aged students. Further, this pilot study was aimed to test a multi-domain view of adultification and

ascertain whether there are distinct relationships between adultification sub-dimensions and depressive symptomatology in young adults.

We recruited 100 students from undergraduate classes at Virginia Tech, establishing an online survey to collect basic demographic characteristics and information about self-efficacy (Self-efficacy scale; Chen, Gully & Eden, 2001), depressive symptomatology (Center for Epidemiologic Studies Depression Scale; Radloff, 1977), family functioning (McMaster Family Assessment Device; Epstein, Baldwin, & Bishop, 1983), and adultification (Parentification Inventory; Hooper, Doehler, & Jannah, 2011). Sixty-two students responded to the online survey with a final total of 59 participants. There were 21 male and 38 female participants, with 24 identifying as Caucasian and 35 identifying as Asian.

The findings of the pilot study suggested that there is a tendency for Asian students to report significantly higher levels of depressive symptomatology compared with Caucasian students ( $t = -2.53, p < .05$ ). Furthermore, in contrast to our expectations, linear regression analysis on the data indicated that higher levels of adultification were associated with *lower* levels of depressive symptomatology for both ethnic groups ( $r = -.43, p < .01$ ). However, when compared with their Caucasian counterparts, Asian students did not report significantly higher levels of adultification, which was verified by the linear regression model that levels of adultification were not significantly predicted by race. Hence, we wondered whether the adultification experience was an adaptive process for young adults and concluded that a further study was needed for verification.

Based on the first-phase pilot study results, we further examined a three-dimensional perspective of adultification between Asian and Caucasian students. The examination was conducted to look at three subscales in the Parentification Inventory, including parent-focused

parentification, sibling-focused parentification, and perceived-benefit parentification, by running a MANCOVA when controlling for gender, birth order, family functioning, and levels of depressive symptomatology. Parent-focused parentification refers to behaviors and responsibilities typically performed by parents but now assumed by offspring, whereas sibling-focused parentification refers to behaviors and responsibilities related to caretaking younger siblings. Perceived-benefit parentification refers to the perceived benefits from the experience of parentification interpreted by children on the Parentification Inventory scale (Hooper et al., 2011).

The second-phase of the analysis of the pilot study showed that parent-focused parentification ( $F(1, 53) = 9.97, p < .01$ ) and perceived-benefit parentification ( $F(1, 53) = 7.92, p < .01$ ) were significantly different between Asian students and Caucasian students. Interestingly, while Asian students reported significantly higher means of parent-focused parentification than Caucasian students, Caucasian students scored higher on perceived-benefit parentification than did Asian students. This finding aligned with our hypothesis that Asians experience higher levels of parent-focused parentification but did not suggest the same results when we hypothesized that Asians would also report higher levels of perceived-benefit parentification than Caucasian students. According to two out of three findings of the pilot study, adultification did not positively predict race, Asian students did not report higher perceived-benefit parentification, and Caucasian students may perceive adultification as a beneficial experience for them when compared with their Asian counterparts. These findings did not align with our original hypotheses.

Although we failed to verify two of our original hypotheses for the pilot study, our research team argued that these two findings might be influenced by limited sample size and by



having self-identified Asian students with inter- or multi-racial ethnicities, including Filipinos, Hispanic-Asians, and White-Non-Hispanic Korean. Thus, this racial variation may have decreased the influence of the cultural context on adultification experiences.

Nevertheless, in our findings, the relationship between high levels of adultification and lower scores on depressive symptomatology suggested that the negative consequences of adultification might be overemphasized and pathologized in the literature. In addition, the influences of cultural context were superficial in the pilot study because race was the only related variable when the analysis occurred.

Therefore, the pilot study suggested that further verification and examination would be needed to clarify the impact of the cultural context on an individual's perceived adultification experience, such as playing dominant roles, taking on parental responsibilities during their childhood and adolescent years, and in attitudes toward family assisting behaviors based on the emphasis of their family culture. A more accurate assessment and a larger sample size that fully represented immigrant offspring of Taiwanese or Chinese descent who are first- or second-generation undergraduates would bring more precision to a subsequent study.

Hence, the present study was informed by the previous pilot study by moving beyond a "race only" analysis and adopting a more nuanced view of culture that acknowledges a possible moderating effect of family obligation attitudes on perceptions of adultification. Thus, the association between Chinese family culture and levels of adultification is tested in the present study. In addition, based on the pilot study, the present study examines the relationships between adultification experiences and depressive symptomatology among Chinese immigrant college-aged students to verify if Chinese immigrant young adults demonstrate higher levels of

depressive symptomatology. In addition to including depressive symptomatology as the only psychological distress outcome, levels of anxiety are included in the present study as informed by the literature and treated as another psychological distress outcome for expecting to provide better and more thorough explanations of adultification impacts on the psychological distress of immigrant offspring. Further, the present study not only looks at the psychological distress of Chinese immigrant offspring, but also assesses the effect of adultification experiences on their psychological well-being.

### **Procedures**

Flyers and recruitment letters (Appendix B & C) were distributed in undergraduate classes and emailed to the list-serves of approved university departments. The flyers and letters were also emailed to organizations and institutions such as the Asian American Student Union, Chinese Student Association, and Taiwanese Student Association, and to Chinese schools and churches in local areas. In addition, through personal connections and public announcements on social media webpages (e.g., Facebook), after receiving permission from webpage organizers, flyers and recruitment letters were shared and posted for data collection.

All participants who qualified for the study were followed and given the online survey link so that they fully understood the purpose of the study. In addition, they provided their informed consent on the first page of the online survey; the consent form was approved by the Institutional Review Board (IRB) at Virginia Tech with IRB No.14-143 (Appendix A & D). Participants followed the instructions online to complete and submit their survey anonymously. With the exception of collecting email addresses from participants for compensation, the present study did not gather any identifiable information from participants. Therefore, all participants

were assured that the study is voluntary and confidential, and that they may refuse or withdraw from the study at any time.

The online survey developed for this study is separated into sections to measure the self-reported acculturative stress (Shortened Social, Attitudinal, Familial, and Environmental Acculturative Stress Scale; Padilla, Wagatsuma, & Lindholm, 1985, see Appendix E), family economic stress (Family Economic Pressure Indicators; Parke et al., 2004, see Appendix G), adultification (Parentification Inventory; Hooper et al., 2011, see Appendix H), family obligation attitudes (Attitudes Towards Family Obligations; Fuligni & Pederson, 2002, see Appendix J), depressive symptomatology (Center for Epidemiologic Studies Depression Scale; Radloff, 1977, see Appendix L), anxiety, (State-Trait Anxiety Inventory; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983, see Appendix N), and psychological well-being (Ryff's Scale of Psychological Well-being; Ryff, 1989, see Appendix O) of Chinese immigrant offspring. Once the participants completed and submitted the online survey, they were awarded a \$10 gift card as compensation, distributed to participants through their emails. The present study was partially funded by the Department of Human Development at Virginia Tech through a \$600 Dissertation Grant Award.

### **Participants**

The present study recruited college-aged students who are over 18 and are offspring of first- or second- generation Chinese or Taiwanese immigrant families in the United States. These Chinese or Taiwanese immigrant offspring are undergraduate or graduate students who were enrolled at a university and resided in the United States at the time of data collection.

Participants who expressed their interest in participating in the study received an email containing information about the study and an online survey link where they could complete and submit their survey (entire survey see Appendix Q).

The present study was able to recruit more than 200 participants; however, not all of the participants completed their survey. The principle of deciding the tolerance of missingness in the study dataset is addressed in Dong and Peng's (2013) article, which indicates that the missing rate of 15% to 20% is common for most social science studies. Thus, after reviewing all the submitted surveys, the researcher decided to exclude participants if their submitted survey had more than 15% of the questions incomplete.

The study ended up including 175 participants. Among these 175 participants, there were 118 male and 57 female, with 132 identifying as either Taiwanese or Chinese and 43 identifying themselves as Chinese or Taiwanese Americans or Americans. The age of the study participants ranged from 18 to 39; the average age was 23.64 with a standard deviation of 3.58. Participants tended to be only children and only 70 participants reported that they have siblings. When looking at the composition of participants' family structure, 147 participants came from married-couple families and 27 participants came from single-parent families while one participant grew up in a grandparent-led family (Table 11). Eighty-one participants identified as first-generation immigrant offspring while 94 participants identified as second- or multiple-generation immigrant offspring. Participants in the present study tended to report higher family income levels with family income levels falling approximately between \$50,000 and \$100,000 for 152 participants. Therefore, it appeared that the socioeconomic status of these Chinese and Taiwanese immigrant families tended to be upper middle-class or upper-income families (Fry & Kochhar, 2014). When it comes to employment status, more than half of the study participants reported that they currently had at least part-time jobs, averaging ten to 20 working hours weekly. In addition, most participants reported that their parents had at least some college or had obtained a 2-year or 4-year college degree; less than 1% of participants indicated that their parents did not have their

high school diploma. Thus, the educational attainments of these immigrant offspring's parents were fairly high in the present study.

### **Measures and Instrumentation**

The present study aimed to analyze the relationships between demographic characteristics, acculturative stress, family economic stress, adultification, attitudes toward family obligation, and the mental health of offspring raised in Chinese or Taiwanese immigrant families. The assessment of mental health status included depressive symptomatology and anxiety levels as well as the psychological well-being of the Chinese immigrant offspring (see Table 10 for the summary table of variable operationalization and measurements used in the study).

A survey instrument was utilized for data collection and the survey combined seven existing scales and questionnaires to assess seven different variables in two different sections, including a section to collect basic demographic characteristics and another section collecting responses on the following variables: acculturative stress, family economic pressure, family obligation attitudes adultification, depressive symptomatology, anxiety levels, and psychological well-being. Preliminary analyses were employed to examine scale dimensions and reliability. Several of the scales were trimmed in order to reduce error and improve model fit. In the present study, the factor extraction method, principle of components, was used because the purpose for this analysis was to identify and compute the composite scores for the factors underlying each of the scales used in the study (Neill, 2008). After reviewing the eigenvalues to obtain the explained variance among scale items to decide which item(s) explained most of the variance for the scale, varimax rotation of factor loading matrix was used to help determine the removal or retaining of the scale items. While factor analysis was used to obtain the explained variance and the trimming of all the scales used in the study, the employment and report of reliability analysis is often

suggested after presenting the results of factor analysis (Neill, 2008). Thus, the study also performed a series of reliability tests after performing the factor analysis results to provide the internal consistency of adjusted shorter form of the scales in the study.

Reliability tests were used to examine the internal consistency of the scale and whether the scale consistently reflects the constructs that the scale is intended to measure. Reliability analysis is often used to test the homogeneity of the scale items that comprise the scale (Streiner, 2003). While Cronbach's alpha is the most common measure for reliability analysis (Field, 2006), the interpretation of reliability analysis results also involves looking at the correlations between each scale item and the total score of the scale under the corrected item-total correlation table. By looking at the table, items that had values less than .30 are poorly correlated with the total items and are often dropped from the scale to boost the Cronbach's alpha value and strengthen the conceptual and statistical integrity of the scale. Cronbach's value often ranges between zero and one, and to determine whether the scale yields good Cronbach's alpha levels or has acceptable internal consistency, the range of Cronbach's alpha listed here are based on Gelim and Gelim's suggestions (2003): 1) Cronbach's alpha greater than .90 are considered excellent internal consistency, 2) Cronbach's alpha levels falling between .80 and .90 are considered good internal consistency, 3) acceptable internal consistency is determined if Cronbach's alpha is between .70 and .80, and 4) Cronbach's alpha levels falling under .70 is considered questionable, and 5) less than .50 is considered poor and unacceptable. Preliminary analyses were conducted to ensure optimal reliability of measures and methodological integrity.

### **Independent variables.**

#### ***Demographic characteristics.***

Questions regarding participants' backgrounds and demographic characteristics were

collected through the first section of the survey instrument and incorporated as control variables in the study. These characteristics included participants' age, gender, nationality, birth order, number of siblings, family structures, generational status, and current employment status and weekly working hours. Participants' family income levels and their parental educational attainments were included as well. In relation to the definition of generational status, how researchers traditionally define the generation of immigrant families is based on an individual's place of birth (Scheidegger, 2007). Individuals born in their original countries who then migrated to the United States are considered "first generation." The children of the first generation immigrant parents who were born in the United States are called the "second generation" (Rumbat, 2008; Rumbaut, 1994; Scheidegger, 2007).

The preliminary analysis derived from descriptive statistical analysis demonstrated that the demographic characteristics tend to be homogeneous and appear to have very little variation. Therefore, our study decided to recode and dummy code those demographic characteristics variables that showed little variability (see Table 10).

While employment status was reversed and dummy coded from four to three categories, a family structure variable was dummy coded from four to two categories. Parental educational attainment was also dummy coded from seven to three categories. Detailed recoded dummy categories and original descriptive characteristics of the following demographic characteristics variables are discussed because they were included in the model for multiple hierarchical regression analysis in the first phase of multivariate analysis. The selection of demographic characteristics variables to be included in the model testing was based on conceptual and statistical considerations. Those demographic variables that did not appear to be highly correlated with the dependent variables of interest were not included in the hierarchical

regression models. Table 12 is a summary of all study variables that were considered prior to multivariate model testing.

Over 70% of participants identified as Chinese or Chinese coming from Hong Kong, 5% identified as Taiwanese, and another 25% identified as Chinese or Taiwanese Americans and Americans. Due to the homogeneity demonstrated by the study sample, nationality was then combined with the original three categories into two dummy coded categories: 1) Chinese or Taiwanese, or 2) Chinese or Taiwanese American, and Americans.

Number of siblings was originally categorized into five categories when participants responded their sibling size from no sibling to more than three siblings. However, as described in Table 11, 60% of our study sample self-identified as only children, 36% of participants have one sibling, and 4% of participants have more than one sibling. Therefore, the study combined the original five categories and dummy coded this demographic characteristics variable into two categories: 1) have no sibling, or 2) have more than one sibling.

Among three categories of generational status, almost equal numbers of participants identified as first- or second-generation immigrant offspring. Only five participants identified as multiple-generation immigrant offspring. Thus, the study combined the original three categories and dummy coded generational status into two categories: 1) first-generation, or 2) second- or multiple-generation.

Approximately 70% of the study participants live in high family income households (\$70,000 and above) when only 30% of the participants report family income levels less than \$70,000 annually. Due to the concentration of high family income levels, the present study dummy coded family income level into three categories: 1) \$10,000 to \$50,000, 2) \$50,000 to \$100,000, and 3) more than \$100,000.



*Acculturative stress.*

Acculturative stress was measured by a shortened version of Social, Attitudinal, Familial, and Environmental Acculturative Stress Scale (SAFE). This 24-item self-report, 5- point Likert-type shortened scale (Appendix E) was derived from a 60-item scale developed by Padilla and his colleagues (1985), which ranges from 1 (not at all stressful) to 5 (extremely stressful) (Mena, Padilla, & Maldonado, 1987). The reliability of SAFE was .89 (alpha) based on 24 items; the scale assessed general and ethnicity specific acculturative stress resulting from cultural differences and adaptation, and three dimensions of acculturative stress are measured. These three dimensions included: 1) general social stressors that are common to young adults, 2) process-oriented stressors, and 3) perceptions of discrimination (Chavez, Moran, Reid, & Lopez, 1997).

To test the adequacy and interpretability of the SAFE scale as a measure of acculturative stress, reliability tests and a principal components factor analysis was employed. Cronbach's alpha for the entire scale was poor ( $\alpha < .60$ ); therefore, a factor analysis was conducted to examine the conceptual properties of the scale's underlying dimensions. The SAFE is theorized to have three subdomains of acculturative stress; however, the results of factor loading revealed that the SAFE scale loaded across six factors and that this loading was rather uninterpretable. The first two factors, having 51% of the scale variance, were retained. After taking out variables that cross-loaded on more than one factor, only items that loaded independently on factor 1, 2, and 3 (load  $>$  or equal to .30) were retained. These items seemed to align with the concepts of ethnic related acculturative stress, the processes of acculturative stress, and the perceptions of discrimination (Davis & Engel, 2011, pp. 72-74; Chavez et al., 1997). Based on the results of factor analysis, the following items were deleted: SAFE 2, 4, 5, 6, 7, 8, 9, 10, 11, 15, 16, 17, 18,

19, and 24. Next, we ran a reliability test to see if the shortened SAFE scale appeared to be reliable. The  $\alpha$  level of the adjusted SAFE scale was  $\alpha = .67$  with 9 SAFE items out of the original 24 items. An inspection of the reliability coefficients, which represented each item's correlation with the scale, revealed item 14 with very low correlations to other scale items. We then decided to delete this item from the scale resulting in an improved  $\alpha$  level of .73. The shortened version of SAFE, utilized in the subsequent analyses, was based on 8 scale items (SAFE 1, 3, 12, 13, 20, 21, 22, and 23; please see Appendix F).

### ***Adultification.***

The present study utilized Hooper and her colleagues' (2011) Parentification Inventory (PI) to measure perceptions of adultification experiences among Chinese immigrant offspring (Hooper et al., 2011). The PI is a retrospective and self-report measure that "captures caregiving roles and responsibilities and the perceived benefits of performing caregiving roles in the family of origin" (Hooper et al., 2011, pp. 230-231), "which apprehend the multi-faceted nature of adultification processes and experiences" (Hooper et al., 2011, pp. 230-231). Hence, the PI focuses on three dimensions: parent-focused parentification, sibling-focused parentification, and the perceived benefit of parentification. Participants responded to 23 items using a 5-point Likert-type scale, ranging from 1 (never true) to 5 (always true), and the raw scores were summed and then divided by the numbers of items on each subscale. Higher total scores indicate that they experience higher levels of adultification (Appendix H).

Although the reliability for the total scale was very good ( $\alpha = .87$ ), a principal components factor analysis with varimax rotation was conducted to examine the underlying structure of the scale and ensure that the scale reflected its intended conceptualization in the most parsimonious manner. The results of the factor analyzed Parentification Inventory (PI) scale

items revealed that the scale loaded across 5 factors (rather than the theorized 3 factors), with the first three factors explaining 78% of the scale variance. Similar to the strategy employed with the SAFE items, we deleted PI items that cross-loaded or loaded on factors 4 and 5. For those items that were single loaded, factor 1, 2, and 3 were retained. These three factors seemed to align with the original conceptualization of the scale and explained participants' experience and behaviors of caretaking other family members and the responsibilities and roles they played for their parents and families (Hooper, 2007). Additional reliability tests were conducted and the item-to-scale correlations were examined. Additional items with low correlations were discarded based on the reliability tests. With these multiple adjustments based on the results of factor analysis and several reliability tests, the adjusted shortened PI scale was finally able to yield an excellent  $\alpha$  level of .92 with 6 items in total (please see Appendix I). These 6 items represented both parent-focused and sibling-focused parentification, which focused more on family assisting behaviors and reflected a more unified and interpretable adultification experience.

***Family obligation attitudes.***

This 24-item questionnaire is a retrospective, self-report measure that focuses on three distinct but overlapping aspects of family obligation: current assistance (the measurement of young adults' expected frequency of family assisting behaviors including household arrangement tasks and time spent with their families), respect for family (the assessment of young adults' beliefs about their values concerning family needs, opinions, and wishes), and future support for the family (the assessment of young adults' beliefs about their obligation to support the family and be near the family in the future). Participants responded to three subscales with 24 items using a 5-point Likert-type scale (Appendix J), ranging from 1 (almost never/not important at all) to 5 (almost always/very important), with higher total scores indicating stronger attitudes toward

family obligation. Stronger attitudes would be indicative of traditional Asian values of collectivism (i.e., everyone contributing to family well being) and respect for family. This measurement reports good internal consistency with Cronbach's alpha levels of .84, .79, and .76 for each of the subscales.

However, upon further examination of the Attitude Toward Family Obligation (FOA) Scale items, eleven items in the first subscale of FOA seemed to contain overlapping themes with the parent-focused and sibling-focused Parentification Inventory questions, which measures the current expected frequency of participants' family assisting behaviors. Thus, the present study decided to exclude the first subscale from FOA for analysis. To further examine the adequacy and interpretability of this two-subscale shortened 13-item FOA scale, the results of the factor analysis reported that the remaining FOA scale items were cross-loaded among five factors. Among these five factors, the first two factors explained 63% of the variance for participants' attitudes toward family obligations. The variance explained by these two factors included the perceptions and attitudes of participants' commitment to family obligations and respect for parents and families. Next, we decided to exclude items if its rotated factor loading reports less than .30 or it was cross-loaded over more than 2 factors. This final cut of items resulted in a 5-item inventory (FOA 12, 15, 18, 19, and 20; see Appendix K) with an internal consistency of .77 (Cronbach's alpha). Taken together, these remaining items tap into perceptions of participants' commitment and respect for parents and families (Fuligni et al., 1999).

#### **Dependent variables.**

***Mental health: Psychological distress and psychological well-being.***

Based on the suggestions in the literature that levels of depressive symptomatology and anxiety are two common indicators to measure and evaluate the construct of psychological distress, depressive symptomatology and state and trait anxiety level were assessed in the present study (Julian, 2011; Spielberger et al., 1983).

***Psychological distress: Depressive symptomatology.***

The Center for Epidemiologic Studies Depression Scale (CES-D) is a 20-item scale (Radloff, 1977) invented to measure depressive symptoms in the general population (Appendix L). The questions on the scale measure six components of clinical depression: depressed mood, feelings of helplessness and hopelessness, feelings of guilt and worthlessness, psychomotor retardation, sleep disturbances, and loss of appetite. Participants will respond to these 20 items using a 4-point Likert-type scale, ranging from 1 (rarely or none of the time; less than 1 day) to 4 (most or all of the times; 5 to 7 days). As for the scoring, zero points were assigned to answers of less than one day, one point for one to two days, two points for three to four days, and three points for five to seven days. However, the scoring of positive items is reversed, and thus item 4, 8, 12, and 16 were reverse coded before analysis. The possible range of scores is from zero to 60. Sixteen is the cutoff score of the 20-item CES-D form, with participants with higher scores indicating higher levels of depression. Scores higher than 16 represent “significant” depressive symptomatology whereas scores lower than 16 indicate “mild” depressive symptomatology of the participants.

Principal components factor analysis was conducted, and the results indicated that the 20-item CES-D scale loaded across four factors, and the first three factors explained 75% of the variance of participants’ self-reported depressive symptomatology at the time they took the survey. According to the results of the factor analysis, items that had its rotated factor loading

less than .30 and were cross-loaded on more than one factor were excluded from the 20-item CES-D scale. Several reliability tests were conducted in order to examine the item-to-scale correlations and trim the scale to its most parsimonious and potent version to reduce error. Based on the results of first reliability tests, CES-D items 2, 5, 8, 9, 12, 14, and 20 were discarded due to low inter-item correlations, resulting in a Cronbach's alpha of .81 for the adjusted 13-item CES-D scale (see Appendix M).

***Psychological distress: Anxiety.***

State and Trait Anxiety Inventory (STAI) is a commonly used self-evaluated measure of state and trait anxiety (Spielberger et al., 1983). It is widely used and translated into multiple languages and versions, and the measure is available for both children and adults (see Appendix N). In the present study, the adult version will be adopted. STAI is used to assess the presence and severity of an individual's self-evaluated current symptoms of anxiety and it has been shown to be able to distinguish symptoms of anxiety from depressive symptomatology (Julian, 2011). There are 40 items allocated into two subscales within the STAI measure. Twenty items are assigned to a state-anxiety subscale to evaluate current state of anxiety, such as participants' subjective feelings of apprehension, tension, nervousness, worry, and objective state of activation of the automatic nervous system. Another 20 items are assigned to a trait-anxiety subscale to measure more stable aspects of anxiety proneness, such as participants' general state of calmness, confidence, and security (Julian, 2011). Respondents were asked to report on a 4-point-Likert scale (e.g., from "not at all" to "very much so" for the state-anxiety scale and from "almost never" to "almost always" for the trait-anxiety scale) with the Cronbach's alpha coefficient ranged from .86 to .95. The scores range from 20 to 80 for each subscale, the higher score indicating greater anxiety (Julian, 2011).

When running a factor analysis on State-Trait Anxiety Inventory (STAI), the results of the STAI scale reported that both subscales were cross-loaded among four factors. The first three factors explained 72% of the variance for the anxiety state subscale while first three factors explained 75% of variance for the anxiety trait subscale. Despite the presence of an additional factor, reliability tests for both STAI subscales and the entire STAI scale revealed a very high  $\alpha$  level of .91. Given the apparent excellent reliability of the scale and its widespread use as a 40-item inventory, it was decided not to trim any items from the scale and use it in the study in its original form (i.e., to use all 40 items).

Apart from using depressive symptomatology and anxiety level as indicators to evaluate mental health of the participants, the assessment of psychological well-being is included to provide an overall evaluation of positive mental health status of Chinese immigrant offspring.

### ***Psychological well-being.***

Measures of psychological well-being often evaluate the judgment of individuals concerning their own overall sense of current living state. The self-reported living state of individuals may consist of a range of elements depending on various theories and models proposed by different researchers (Kafka & Kozma, 2002; Ryff, 1989; Warr, 2012). Although there is no consensus for the definition of psychological well-being and researchers have not come to an agreement on what is the best way to measure this construct, Ryff (1989) has her own emphasis on a normative criterion for assessing mental health that is based on the tenets of humanist psychology. Ryff (1989) developed the Scales of Psychological Well-Being (SPWB) based on a combination of mental health, clinical, and life span developmental theories. She also suggested assessing a person's level of positive functioning for the construct of psychological well-being when she treated the constructs of the purpose in life, autonomy of individuals, or

positive relationships with others differently from the constructs of psychological distress (Kafka & Kozma, 2002).

Ryff and Keyes (1995) theoretically and operationally depict psychological well-being as a six dimensional eudaimonic construct that is distinct from the concept of subjective well-being. Their depiction has prompted other researchers to measure well-being in a more positive and broader sense (Kafka & Kozma, 2002). The following six interrelated components under psychological well-being include autonomy (“I have confidence in my opinions, even if they are contrary to the general consensus”); environmental mastery (“In general, I feel I am in charge of the situation in which I live”); personal growth (“I think it is important to have new experiences that challenge how you think about yourself and the world”); positive relations with others (“People would describe me as a giving person, willing to share my time with others”); purpose of life (“I feel good when I think of what I’ve done in the past and what I hope to do in the future”); and self-acceptance (“I like most aspects of my personality”).

There are several versions of Ryff’s Scales of Psychological Well-being (SPWB); the original form contains 120 items with 20 items for each subscale (Cronbach’s alpha ranged from .86 to .93 for the 120-item form). Shorter forms include one version of 84 items with 14 questions for each subscale (Cronbach’s alpha ranged from .97 to .99), another with 54 items with nine questions per subscales, and 18 items for a short version, with 3 questions per subscale (Seifert, 2005). Due to the length and number of questions of the long form as well as poor internal consistency of the short version, the present study adopted the 54-item version of Ryff’s SPWB, which is recommended by other researchers (Nišević & Cigić, 2013). The 54 items from Ryff’s SPWB (Ryff, 1989; see Appendix O) is rated on a 6-point Likert scale, ranging from 1 (strongly disagree) to 6 (strongly agree); higher scores on each scale indicate better well-being.



When running a factor analysis for the 54-item medium-length Ryff's Psychological Well-being scale (SPWB), SPSS was unable to run the analysis due to the large amount of items included in the SPWB scale. The results of the factor analysis indicated that the factor failed to rotate to converge in 25 iterations with the convergence of .20 when 15 components were extracted for the scale. Therefore, factor analysis of the SPWB scale failed to provide suggestions on adjusting better scale. The present study then ran a series of reliability tests for all the subscales and I based on the results of six reliability tests to decide what to include in Ryff's SPWB scale. These six subscales included Positive Relations with Others (PR), Autonomy (AT), Environmental Mastery (EM), Personal Growth (PG), Purpose in Life (PL), and Self-Acceptance (SA).

When running reliability tests for PR, EM, and SA subscales, high  $\alpha$  level, with  $\alpha = .73$  for the PR subscale,  $\alpha = .86$  for the EM subscale, and  $\alpha = .82$  for the SA subscale. Although three other subscales also yield fairly high  $\alpha$  levels, based on the results of reliability tests and an examination of the item-to-scale correlations, several items from the AT, PG, and PL subscales were discarded in order to "tighten up" the scale and improve the  $\alpha$  levels of the entire SPWB scale. After adjusting these three subscales, the  $\alpha$  levels of these subscales were boosted from  $\alpha = .52$  to  $\alpha = .57$  for the AT subscale, from  $\alpha = .69$  to  $\alpha = .74$  for the PG subscale, and from  $\alpha = .807$  to  $\alpha = .814$  for the PL subscale. Therefore, after adjusting these three subscales based on the results of multiple reliability tests, the adjusted SPWB scale was able to obtain its Cronbach's alpha from .94 to .95 with 47 items in total (see Appendix P).

## **Summary**

In conclusion, data was collected by extending the previously established surveys used in pilot study, such as the Parentification Inventory (PI) and the Center for Epidemiologic Studies

Depression Scale (CES-D). Further, the present study also incorporated the Social, Attitudinal, Familial, and Environmental Acculturative Scale (SAFE), the Attitudes Toward Family Obligation Scale (FOA), State-Trait Anxiety Inventory (STAI), and Ryff's Scale of Psychological Well-being (RSPWB) to investigate the direct and indirect effects among acculturative stress, adultification, family obligation attitudes, psychological distress, and well-being of Chinese immigrant offspring.

## **Analysis Plan**

### **Missing data.**

Researchers suggest that only including complete cases for analysis may bias the results of the study or lead to an incomplete understanding of the study findings (Osborne, 2013; Pigott, 2001). However, it is important to appropriately handle data missingness (Osborne, 2013; Stuart, Azur, Frangakis, & Leaf, 2009). Incongruent conclusions may result from missing data or incomplete cases, and thus to avoid reporting inaccurate findings, the study followed best practices suggested by the literature in handling missing data and incomplete cases for correct estimation and better analysis results, as described below.

According to suggestions described in *Best Practices in Data Cleaning* (Osborne, 2013) and elsewhere (Pigott, 2001; Schafer & Graham, 2002), determining the mechanism of missingness for study data is very critical for data analysis, representation, and interpretation of the study findings. There are three types of missing data based on the randomness of the data: missing completely at random (MCAR), missing at random (MAR), and missing not at random (MNAR). Osborne (2013) indicates that categorizing the missingness of incomplete or missing

data into MCAR, MAR, or MNAR helps to determine the mechanism of missingness for the study and allows researchers to employ appropriate methods handling their missing data.

To determine the mechanism of the missingness for the dataset of the present study, the researcher used IBM SPSS version 22.0 to run Little's MCAR Chi-Square test (Little, 1992) to determine if the pattern of missing value is not dependent on the data value. According to the results of Little's MCAR Chi-Square test for each scale variable, the mechanism of the dataset for the present study cannot be categorized as MCAR because the  $p$  values of each scale variable is less than .05, which rejects the null hypothesis (the mechanism of the dataset is missing completely at random) and violates the MCAR assumption. Therefore, the mechanism of missingness for the present dataset is considered as MAR or MNAR. The present study also conducted a missing value analysis in SPSS to confirm the pattern of missing values for the present study, and found that the mechanism of missingness for the present study's dataset appears more likely to be missing in a random format rather than in a monotone format.

Unlike other missingness treatment methods (listwise or pairwise deletions, mean substitution, and regression estimation methods), expectation-maximization (EM) estimation does not require the dataset to be MCAR, and EM works best for MAR data but is unbiased with a MNAR dataset even though EM assumes data to be MAR (Schafer & Graham, 2002). Further, EM estimation consists of two steps, the E step and M step, to complete the estimation for missing values. Based on the observed values and current estimates of the parameters, E step determines the conditional expectation of the missing data and then substitutes the missing values with these expected estimations. During each iteration analysis, in addition to running E steps for expected estimation, the maximum likelihood estimates of the parameter is computed and then M step fills in these missing values. By performing EM estimation method, the dataset

of the present study can be treated by these adjusted estimates for missingness (IBM SPSS Statistics Corporation, 2014; Pigott, 2001).

Knowing the fact that EM estimation is a better option for handling missing values for the present study, SPSS is used to run a series of EM estimations for each of the scale variables to compute and obtain adjusted estimates for all the missing values in the dataset.

### **Analytic Strategy**

After appropriately treating the dataset for the missingness, different analyses for testing various hypotheses of the study were performed. First, correlations were run to examine the associations between variables theorized to be relevant to the dependent variables of interest. These findings informed the second phase of analyses, which involved multivariate model testing. Model testing involved two components. Component one used SPSS 22.0 to run a series of hierarchical multiple regressions for testing the contribution of demographic characteristics variables, acculturative stress, and adultification in explaining mental health outcomes among Chinese immigrant young adults in the study. This hierarchical regression analysis permitted the examination of how much each “block” of variables explained variance on the dependent variable. The structure and sequence of each block was informed by theoretical and statistical considerations. Therefore, utilizing the hierarchical procedure, one could better ascertain the unique contribution of acculturative stress and adultification in terms of predicting depressive symptomatology, anxiety, or conversely, psychological well-being, as well as the relationship of these concepts with various mental health outcomes in conjunction with key control variables (demographic characteristics variables) that may also hold explanatory power. To reduce the possibility of bias, hierarchical multiple regressions were conducted using the approach of bootstrapping with 5,000 sample replications. The second component of model testing involved

testing moderation and mediation per the conceptual model and hypotheses on page 7. This phase of analysis was less concerned with the role of demographic characteristics variables, and focused on the processual mechanism by which acculturative stress might have an impact on the mental health outcomes of influence. The PROCESS macro written by Hayes (2013) was used to further examine the conditional indirect effects between acculturative stress, family obligation attitudes, and childhood adultification, as well as acculturative stress, childhood adultification, and depressive symptomatology, anxiety, and the psychological well-being of Chinese immigrant offspring. This SPSS macro allows for the exploration of fairly complex models of relationships among variables and was utilized for the purpose of testing a model of conditional indirect effect, commonly known as the moderated mediation effect (Preacher, Rucker, & Hayes, 2007).

Preacher and his colleagues (2007) indicated that there is a fair amount of confusion over what patterns of causal relationship constitute various kinds of effects, and different researchers refer to these effects as mediated moderation or moderated mediation. Therefore, they suggest a general umbrella term, conditional indirect effect, to explain the magnitude of an indirect effect at a particular value of a moderator or at the particular values of more than one moderator (Preacher et al., 2007). They also further elaborated the definition based on the term coined by James and Brett (1984) to explain the occurrence of moderated mediation when “the strength of an indirect effect depends on the level of some variables, in other words, when mediation relations are contingent on the level of a moderator” (Preacher et al., 2007, p.193). The authors also showed that most of the existing studies tended to investigate mediation effects, moderation effects, or both effects individually. Formally testing conditional indirect effects are rare in the existing literature. This may be because the investigations of conditional indirect effects often go

unnoticed or unexamined for the limited methods introduced or discussed in the literature (Preacher et al., 2007). MacKinnon and colleagues (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; MacKinnon, Lockwood, & Williams, 2004) examined various strategies for testing the significance of indirect effects and found the four most popular strategies used in the literature were the causal steps strategy, distribution of the product strategies, resampling or bootstrapping strategies, and a different product of coefficients strategies. However, Preacher and his colleagues (2007) indicated that the causal steps strategy does not directly address hypotheses of interest while suffering from low power. In addition, though, given the fact that distribution of the product strategies may be the most accurate analytic method to determine the significance of confidence interval, it is unfortunate that this strategy works better for a simple mediation models. Extending this method for much more complicated conditional indirect effect models typically involved extensive analytic programming and procedures when conducting the analysis. Further, when using the product of coefficient strategies, researchers often find that the sample size is not large enough for ensuring a good normal approximation based on the assumption of the product of coefficient strategies (Preacher et al., 2007). Thus, Preacher and his colleagues argue that with the restriction of the assumption for the product of coefficient strategies, bootstrapping resampling strategies may be a better option for estimations and hypotheses testing. This is because the bootstrapping strategy is free from the requirement of normal distribution when conducting inference tests based on the normal shape of sampling distributions. Although one of the major drawbacks of using bootstrapping was that the process of computing the confidence limits took much longer than computing that for single-sample methods, because of the development and advancement of computer processors and statistical

software, time and speed are no longer issues when implementing bootstrapping strategies (Preacher et al., 2007; Hayes, 2009).

In addition to being time consuming, the potential for error in hand calculation is high for bootstrapping strategies. Due to these drawbacks, an asymptotic and bootstrapping method with SPSS macro from a regression or path-analytic framework is suggested by researchers to more appropriately and better assess the processual model of conditional indirect effects (i.e., MODMED; Preacher et al., 2007; Preacher & Hayes, 2008). Nevertheless, due to further improvements and wider inclusion of various forms of conditional process modeling, which range from model 1 to model 76, the SPSS macro (PROCESS version 2.10) proposed by Hayes (2013) is implemented to test the moderated mediation of the present study.

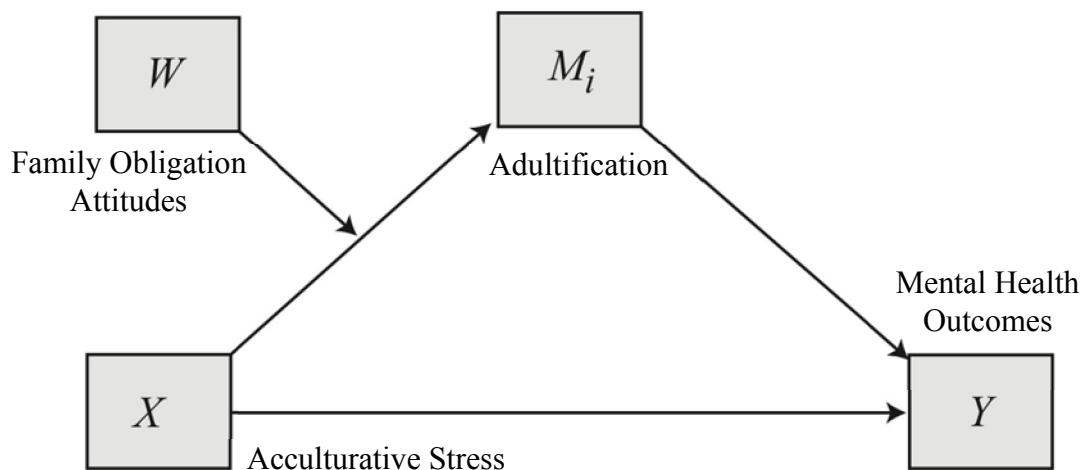


Figure 2 Conceptual Diagram for Moderated Mediation Model

In the present study, the conditional process modeling (moderated mediation effect) is tested when a mediator  $M$  (self-reported adultification experiences of Chinese immigrant offspring) mediates the direct effect of the independent variable  $X$  (the perceived acculturative

stress reported by Chinese immigrant offspring) on the outcome or dependent variable  $Y$  (the depressive symptomatology and anxiety level as well as psychological well-being reported by Chinese immigrant offspring) when this indirect effect depends on the particular value of the moderator  $W$  (attitudes of Chinese immigrant offspring toward family obligations) on the causal relationship between acculturative stress and adultification experiences.



## CHAPTER FOUR

### Results

In this chapter, I will present and interpret the study findings based on the results of statistical analyses, including bivariate correlational analysis, hierarchical regression analysis with bootstrapping approach, and multiple regressions with the utilization of the PROCESS macro (Hayes, 2013) to test the conditional indirect effects of a moderated mediation model. This chapter will present and discuss the statistical results in the order in which the analyses were conducted.

#### Bivariate Correlations

Table 1 presents the correlation coefficients, mean, and standard deviations between select demographic characteristics variables (gender, generational status, numbers of siblings, and family income level), the predicting variables (acculturative stress, adultification, family obligation attitudes), and the outcome variables (depressive symptomatology, anxiety, and psychological well-being) that comprise the multivariate models tested in the study.

As shown in Table 1, being a female was associated with weaker attitudes toward family obligation ( $r = -.24, p < .001$ ), less adultified behaviors ( $r = -.34, p < .001$ ), more acculturative stress ( $r = .28, p < .001$ ), less depressive symptomatology ( $r = -.38, p < .001$ ), and better psychological well-being ( $r = .27, p < .001$ ). Table 1 also indicates that being second- or multiple- generation immigrant offspring were associated with less acculturative stress ( $r = -.20, p < .001$ ), stronger attitudes toward family obligations ( $r = .30, p < .001$ ), more adultification experiences ( $r = .49, p < .001$ ), more depressive symptomatology ( $r = .45, p < .001$ ), higher anxiety levels ( $r = .17, p < .05$ ), and lower levels of psychological well-being ( $r = -.17, p < .05$ ). Bivariate correlations also demonstrated that bigger family size (more siblings) was associated

Table 1 *Correlations and Descriptive Statistics of Selected Demographic Characteristics, Predicting Variables, and Outcome Variables for Hierarchical Multiple Regression Model*

Variable	1	2	3	4	5	6	7	8	9	10
1. Gender	---									
2. Generational Status	-.65**	---								
3. Number of Siblings	-.24**	-.11	---							
4. Family Income Level	-.07	.28**	.54**	---						
5. Acculturative Stress	.28**	-.20**	-.27**	.03	---					
6. Adultification	-.34**	.49**	-.64**	-.29**	-.05	---				
7. Family Obligation Attitudes	-.51**	.30**	.27**	-.09	-.51**	.32**	---			
8. Depressive Symptomatology	-.38**	.45**	-.41**	.05	.37**	.60**	.03	---		
9. Anxiety State and Trait	-.14	.17*	-.22**	.11	.47**	.26**	-.03	.80**	---	
10. Psychological Well-being	.27**	-.17*	.22**	-.17*	-.41**	-.26**	.09	-.81**	-.89**	---
<i>n</i>	175	175	175	175	175	175	175	175	175	175
<i>M</i>	1.33	1.54	1.40	2.03	21.92	18.15	14.02	31.71	98.80	164.89
<i>SD</i>	.47	.50	.49	.36	3.96	5.87	3.73	5.42	12.78	18.85

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

with stronger attitudes toward family obligations ( $r = .27, p < .001$ ) and better psychological well-being ( $r = .22, p < .001$ ). Being an only child (as opposed to having siblings) in our study was associated with more acculturative stress ( $r = -.27, p < .001$ ), more adultification experiences ( $r = -.64, p < .001$ ), more depressive symptomatology ( $r = -.41, p < .001$ ), and higher levels of anxiety ( $r = -.22, p < .001$ ).

Correlational analyses also revealed that higher levels of family income were associated with less acculturative stress ( $r = -.22, p < .001$ ), less reported depressive symptomatology ( $r = -.27, p < .001$ ), lower levels of anxiety ( $r = -.34, p < .001$ ), and higher levels of psychological well-being ( $r = .23, p < .001$ ). Additionally, more acculturative stress was associated with more depressive symptomatology ( $r = .37, p < .001$ ) and higher levels of anxiety ( $r = .47, p < .001$ ), but was associated with lower levels of psychological well-being ( $r = -.41, p < .001$ ). Although we found that weaker attitudes toward family obligations ( $r = -.51, p < .001$ ) were associated with more acculturative stress, there was no significant association between acculturative stress and perceptions of adultification. Further, perceptions of adultification were associated with stronger attitudes toward family obligations ( $r = .32, p < .001$ ), and more depressive symptomatology ( $r = .60, p < .001$ ), as well as higher levels of anxiety ( $r = .26, p < .001$ ).

Consistent with what the literature suggests, having more adultification experiences was negatively associated with psychological well-being ( $r = -.26, p < .001$ ) (Lazarevic et al., 2012) and more depressive symptomatology was associated with higher levels of anxiety ( $r = .80, p < .001$ ). Both depressive symptomatology ( $r = -.81, p < .001$ ) and anxiety levels ( $r = -.89, p < .001$ ) were negatively associated with psychological well-being (Winefield, Gill, Taylor & Pilkington, 2012).

### **Multivariate Analyses**

**Demographic characteristics and processual factors contributing to depressive symptomatology, anxiety, and psychological well being among Chinese immigrant young adults.**

***Hierarchical multiple regression model analysis.***

Based on the results of bivariate correlations and the conceptual framework derived from the literature and Burton's (2007) conceptual model for childhood adultification, a series of bootstrapped (i.e., bias corrected) hierarchical regressions were performed to examine the contributions of selective demographic characteristics variables (i.e., gender, generational status, number of siblings, and family income level), acculturative stress, and perceived adultification in predicting three mental health outcomes (depressive symptomatology, anxiety, and psychological well-being). In addition to theoretical considerations, bivariate correlations and multicollinearity diagnostics informed the choice of demographic characteristics variables to be included in the multivariate analyses. The goal of trimming back the number of demographic characteristics variables to be included in the analysis was to ensure statistical integrity and develop the most parsimonious model in order to examine the extent to which adultification uniquely contributes to explaining mental health outcomes among Chinese immigrant offspring. Demographic characteristics factors were removed from the analyses if they had no explanatory power or were highly correlated with a similar factor. For example the study assessed several variables on the family social location such as mother's education, family income, and family structure. Subsequently, only family income level was retained in the analysis because it seemed to hold the most explanatory promise based on preliminary analyses and also did not violate multicollinearity assumptions. Other demographic characteristics variables were examined (e.g., age, nationality, and employment status) and removed if they exceeded tolerance based on the

collinearity diagnostics produced by SPSS (if the tolerance is less than .20 and VIF is greater than 5 for variables, they are considered collinear with other variables). Demographic characteristics variables were included in the hierarchical regression largely as control variables. It is recognized that they may hold explanatory power with regard to the dependent variables; however, here I was interested in isolating the effects of acculturative stress and adultification in conjunction with the control demographic characteristics factors. Three hierarchical multiple regression models were tested; each permitted the assessment of the effect for its unique contribution of acculturative stress and adultification experiences on the mental health outcomes of interest (level of depressive symptomatology, anxiety level, and psychological well-being of immigrant offspring).

***Hypothesis 1.1: Controlling for demographic characteristics factors, higher levels of acculturative stress and adultification are predictive of higher levels of depressive symptomatology.***

Table 2 presents the results of three models in the hierarchical multiple regression analysis and summarizes the contribution of demographic characteristics variables, acculturative stress, and adultification experiences in explaining variation in immigrant offspring's reports of depressive symptomatology. The first model (which represents the imputation of demographic variables in the first "block") indicated that being a male with the absence of siblings and reported lower family income level significantly predicted levels of depressive symptomatology. The first model results showed that females in our study sample were less likely to report depressive symptoms ( $\beta = -.52, t = -6.31, p < .01$ ) and that those who reported higher levels of family income were less likely to feel depressed ( $\beta = -.27, t = -4.67, p < .01$ ). However, the results also indicated that participants with siblings were less likely to feel depressed in our study

Table 2 Summary of Hierarchical Regression Analysis for Variables Predicting Depressive Symptomatology (N = 175)

Variable	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE (B)</i>	$\beta$	<i>B</i>	<i>SE (B)</i>	$\beta$	<i>B</i>	<i>SE (B)</i>	$\beta$
Gender	-6.02	.96	-.52***	-6.17	.83	-.54***	-4.32	.86	-.38***
Number of Siblings	-5.42	.67	-.49***	-4.32	.60	-.39***	-.99	.87	-.09
Generational Status	.30	.87	.03	1.28	.77	.12	.70	.73	.06
Family Income Level	-4.07	.87	-.27***	-2.92	.77	-.20***	-3.10	.72	-.21***
Acculturative Stress				.54	.07	.39***	.60	.07	.44***
Adultification							.37	.07	.40***
$R^2$		.47			.60			.65	
<i>F</i> for change in $R^2$		40.16***			56.39***			25.53**	

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

sample ( $\beta = -.49, t = -8.08, p < .01$ ). Demographic characteristics factors alone explained 47% of the variation in depressive symptomatology. Adding the variable of acculturative stress (represented in the second “block” of the analysis) in addition to demographic characteristics variables comprised model 2. Model 2 results revealed, as expected, that even when controlling for demographic factors, acculturative stress was positively and significantly predictive of higher levels of depressive symptomatology among immigrant offspring in the study ( $\beta = .39, t = 7.51, p < .01$ ). Acculturative stress explained an additional 13% of the variation in depressive symptomatology beyond the demographic characteristics in the model.  $R^2$  change was significant, meaning that including acculturative stress into the regression analysis makes the model more predictive of higher levels of depressive symptomatology. This finding suggested that participants who experienced higher levels of acculturative stress tended to report more depressive symptoms. Finally, looking at the full model (model 3) in this hierarchical multiple regression analysis (including adultification as a variable in the third “block”), in addition to the impact of demographic characteristics variables and acculturative stress, adultification positively and significantly influenced levels of depressive symptomatology ( $\beta = .40, t = 5.05, p < .01$ ). Adultification contributed an additional 5% of the variance in depressive symptomatology, and this change was significant, suggesting that conceptually it is a meaningful explanatory process in understanding depressive symptomatology among Chinese immigrant young adults. The significance of adultification in explaining depressive symptomatology suggested that participants who reported more adultification experiences tended to show higher levels of depressive symptoms, which is consistent with the existing literature (Hooper et al., 2015). Model 3 explained a good bit of the variation of Chinese immigrant young adults’ reports of depressive symptomatology with a total  $R^2$  (adjusted) of .65 ( $p < .001$ ).

***Hypothesis 1.2: Controlling for demographic characteristics factors, higher levels of acculturative stress and adultification are predictive of higher levels of anxiety.***

Table 3 shows the results of the three hierarchical multiple regression models for the impact of four demographic characteristics variables, acculturative stress, and adultification experiences on anxiety levels. According to the results for the adjusted three models, the second analysis of three hierarchical multiple regression models was adopted for anxiety as the outcome variable when selected demographic characteristics variables, acculturative stress, and adultification were independent variables. The first model in this analysis showed that being a male ( $\beta = -.34, t = -3.32, p < .01$ ) and having no siblings ( $\beta = -.26, t = -3.39, p < .01$ ) was more likely to result in higher levels of anxiety. Immigrant offspring who report lower levels of family income tended to experience higher levels of anxiety ( $\beta = -.37, t = -5.07, p < .01$ ). The result of model 1 did not show any significant impact of generational status on participants' anxiety level. However, the demographic characteristics variables alone explained 19% of the variation in anxiety.

Results from model 2 indicated that while being a male ( $\beta = -.36, t = -3.95, p < .01$ ), having no siblings ( $\beta = -.14, t = -1.99, p < .05$ ), and having lower family income level ( $\beta = -.27, t = -4.23, p < .01$ ) continue to have significant impact on participants' anxiety level, adding acculturative stress into model 2 improved the explanatory power on anxiety, and an additional 19% of variation in anxiety is explained by acculturative stress. This result showed that acculturative stress also demonstrated a strong and positive effect on participants' anxiety levels ( $\beta = .47, t = 7.18, p < .01$ ). In model 3, when adding adultification into the full model, the result indicated that adultification ( $\beta = .26, t = 2.44, p < .05$ ) had positive and significant impacts on participants' anxiety levels. By looking at the results of full model, adultification contributed to



Table 3 Summary of Hierarchical Regression Analysis for Variables Predicting Anxiety ( $N = 175$ )

Variable	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE (B)</i>	$\beta$	<i>B</i>	<i>SE (B)</i>	$\beta$	<i>B</i>	<i>SE (B)</i>	$\beta$
Gender	-9.27	2.80	-.34**	-9.69	2.46	-.36***	-6.90	2.68	-.25**
Number of Siblings	-6.66	1.97	-.26**	-3.54	1.78	-.14**	1.48	2.70	.06
Generational Status	-3.21	2.56	-.13	-.45	2.28	-.02	-1.34	2.27	-.05
Family Income Level	-12.92	2.55	-.37***	-9.66	2.28	-.27***	-9.94	2.25	-.28***
Acculturative Stress				1.52	.21	.47***	1.61	.21	.50***
Adultification							.56	.23	.26**
$R^2$	.19				.37			.39	
<i>F</i> for change in $R^2$	11.11***				51.49***			5.94**	

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

another 2% of variation in explaining anxiety and the change of  $R^2$  is significant. This result showed that, conceptually and statistically, including adultification into the model of anxiety level among Chinese immigrant offspring improves its explanatory power. Results of the second hierarchical multiple regression analysis of three models for anxiety showed that males who are only children and who report lower levels of family income tended to suffer more acculturative stress, perform more adultified behaviors, and were more likely to report higher levels of anxiety.

***Hypothesis 1.3: Controlling for demographic characteristics factors, higher levels of acculturative stress and adultification are predictive of lower levels of psychological well-being.***

Table 4 indicates the results of running a hierarchical multiple regression analysis for three models of psychological well-being. The third hierarchical multiple regression analysis was to test the impact of selective demographic characteristics variables, acculturative stress, and adultification experiences on participants' self-reported psychological well-being. In model 1, being a female ( $\beta = .58, t = 5.84, p < .01$ ), with siblings ( $\beta = .34, t = 4.62, p < .01$ ), identified as second- or multiple-generation ( $\beta = .28, t = 2.90, p < .01$ ), and reporting higher family income level ( $\beta = .30, t = 4.30, p < .01$ ) all highly and positively predict psychological well-being, and these demographic characteristics variables explain 24% of the variation in psychological well-being alone. This result suggested that second- or multiple-generation Chinese immigrant females who have siblings and reported higher levels of family income were more likely to report higher levels of psychological well-being. In model 2, the result was consistent with the hypothesis that acculturative stress has significant but negative impact on psychological well-being, which was verified by its explanatory power: an additional 15% variation in psychological

Table 4 Summary of Hierarchical Regression Analysis for Variables Predicting Psychological Well-being (N = 175)

Variable	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE (B)</i>	$\beta$	<i>B</i>	<i>SE (B)</i>	$\beta$	<i>B</i>	<i>SE (B)</i>	$\beta$
Gender	23.39	4.00	.58***	23.95	3.58	.60***	23.22	3.97	.58***
Number of Siblings	12.99	2.82	.34***	8.80	2.60	.23**	7.47	4.01	.20
Generational Status	10.62	3.66	.28**	6.91	3.32	.18**	7.14	3.37	.19**
Family Income Level	15.71	3.65	.30***	11.33	3.33	.22**	11.41	3.34	.21**
Acculturative Stress				-2.05	.31	-.43***	-2.07	.32	-.43***
Adultification							-.15	.34	-.05
$R^2$		.24			.39			.00	
<i>F</i> for change in $R^2$		14.38***			43.77***			.19	

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

well-being is explained by acculturative stress and the change of  $R^2$  is significant. However, model 3, which included the adultification variable in the analysis, indicated that adultification did not significantly predict psychological well-being. The inclusion of adultification in the model did not add any explanatory power.

Table 5 (on next page) presents a “snapshot” of the full model (model 3) for all three mental health outcomes and provides an overview of the predictive relationships of demographic characteristics, acculturative stress, and adultification experiences and outcome variables. For all three outcomes it appeared that a particular demographic profile was revealed: males who were only children and reported lower levels of family income were significantly more likely to report depressive symptomatology, higher anxiety levels, and poorer psychological well-being. This pattern held true even when adding acculturative stress and adultification into the regression model for analysis. Acculturative stress also seemed to be indicative of poorer mental health regardless of its dimension as it was found to have significant positive impact on depressive symptomatology and anxiety levels of participants, and had a strong but negative impact on psychological well-being. Adultification experiences were found to be significant for positively predicting levels of depressive symptomatology and anxiety, but were not found to be significant in predicting the psychological well-being of the Chinese immigrant offspring, suggesting that it may be more “destructive” (Jurkovic, 1997) than adaptive.

Table 5 Summary of Hierarchical Regression Analysis for Mental Health Outcome Variables (N = 175)

Variable	Model 3 (Depressive Symptomatology)			Model 3 (Anxiety)			Model 3 (Psychological Well-being)		
	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$
Gender	-4.32	.86	-.38***	-6.90	2.68	-.25*	23.22	3.97	.58***
Number of Siblings	-.99	.87	-.09	1.48	2.70	.06	7.47	4.01	.20
Generational Status	.70	.73	.06	-1.31	2.27	-.05	7.14	3.37	.19**
Family Income Level	-3.10	.72	-.21***	-9.94	2.25	-.28***	11.41	3.34	.22**
Acculturative Stress	.60	.07	.44***	1.61	.21	.50***	-2.07	.32	-.43***
Adultification	.37	.07	.40***	.56	.23	.26*	-.15	.34	-.05
$R^2$		.65				.39		.39	
<i>F</i> for change in $R^2$		25.53***				5.94*		.19	

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

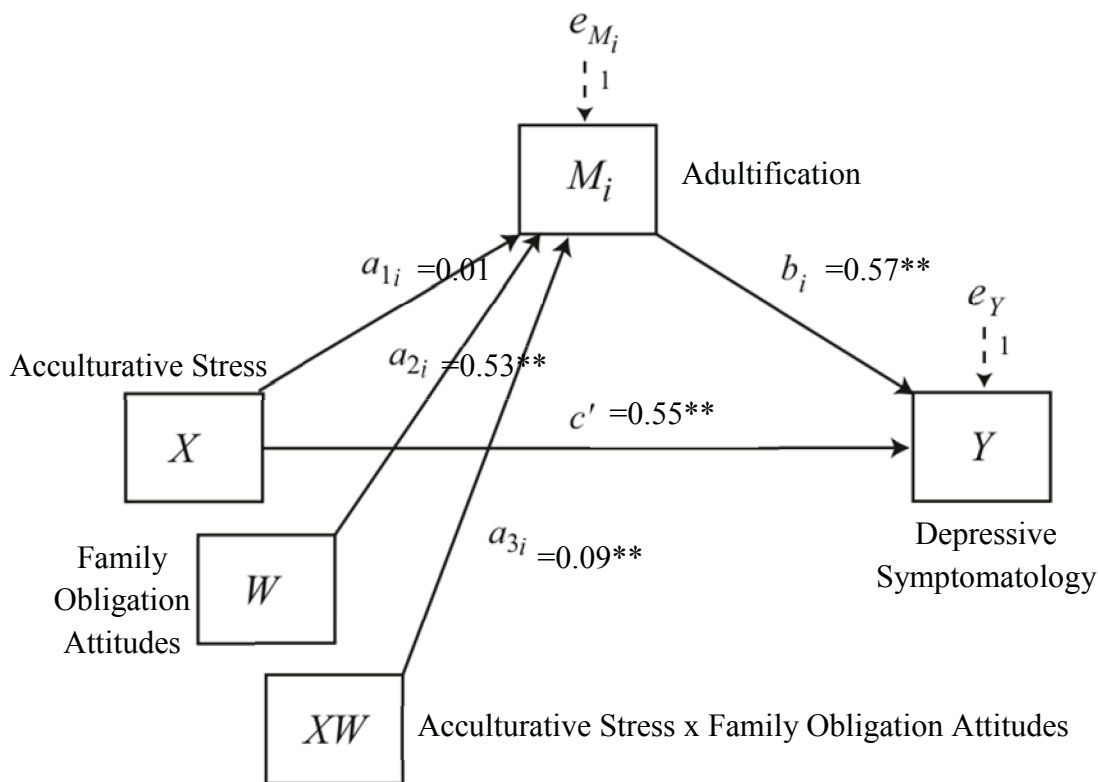
**A process model of acculturative stress, adultification and mental health outcomes among Asian offspring: Multiple regression model analysis with PROCESS macro and bootstrapping strategy.**

While the results of the hierarchical regression models confirmed the connections between demographic characteristics factors, acculturative stress, adultification, and the mental health outcomes of interest, a central concern of this study was to examine the process by which acculturative stress might impact Chinese immigrant offspring. Based on theory and the extant literature (Fuligni & Zhang, 2004; Lee, 1989), it was hypothesized that traditional Chinese values such as filial piety and family interdependence, assessed in the current study as family obligation attitudes, would serve as protective factors with respect to adultification. That is, those young adults who were highly committed to their families and valued their obligations to them would report less adultification in the face of acculturative stress. It was further theorized that the effects of acculturative stress on mental health would occur through adultification. Based on this theorizing, a conceptual model of moderated mediation was advanced (Figure 2). The PROCESS macro within SPSS was utilized to test the conceptual model, which consisted of conditional indirect modeling (e.g., moderated mediation) between family obligation attitudes, adultification experiences, and the psychological distress (depressive symptomatology and anxiety) and well-being of Chinese immigrant offspring.

PROCESS yields unstandardized regression coefficients, standard errors, t and p values, and the 95% bias corrected confidence interval for each of the variables. At this phase of the analysis, demographic characteristics variables were not included in examination because the focus of the analysis at this phase was to verify whether family obligation attitudes moderate the mediation effect of adultification on acculturative stress on our outcome variables (depressive

symptomatology, anxiety, and psychological well-being). Model 7 (the statistical model is summarized in Figure 3) was specified in the PROCESS macro when running three SPSS multiple regression analyses using bootstrapping strategy of 5,000 resampling and bias-corrected method to verify the moderation effect of family obligation attitudes on the relationship between acculturative stress and adultification when the relationships between acculturative stress and three outcome variables are mediated by adultification.

Figure 3 Statistical Diagram of Moderated Mediation Model for Acculturative stress, Family Obligation Attitudes, Adultification, and Depressive Symptomatology (Model 7)



Note.  $^{**}p < .01$ .  $^*p < .05$ .  $e = \text{Residual}$

***Hypothesis 2.1: More traditional family obligation attitudes moderate the positive relationship between acculturative stress and adultification when adultification mediates the relationships between acculturative stress and depressive symptomatology.***

With regard to the moderation component of model 7, acculturative stress was treated as an independent variable, family obligation attitudes were treated as the moderator, and adultification was treated as an “outcome” variable. When running the analysis by using PROCESS macro, as recommended by Hayes (2013), mean centering was selected for the moderation component of the analysis. Mean centering should be performed before the computation of the product and model estimation, and thus selecting this command in PROCESS allowed us to have SPSS do the mean centering before it tested the moderation effect. The reason for suggesting using mean centering is the fact that our X (predictor) and M (moderator) would likely highly correlate with XM (interaction) and this will cause estimation issues when there is a likely chance of multicollinearity and thus result in poor and odd estimates of regression coefficients for the study variables (Hayes, 2013, pp. 282-283).

The results (Figure 3, Table 6) demonstrated that acculturative stress and family obligation attitudes explained 16% of variance of adultification when they significantly predicted higher levels of adultification ( $F(3, 171) = 11.18, p < .01$ ). Although the path from family obligation attitudes to adultification experiences was significant ( $B = .53, t = 4.03, p < .01$ ), the path from acculturative stress to adultification experience was not significant ( $B = .01, t = .10, p > .05$ ). However, the results of the moderation test showed that there was a significant interaction effect (moderation) between acculturative stress and family obligation attitudes ( $B = .09, t = 2.86, p < .01$ ). This effect was present when 95% of lower and upper bounds of bias-corrected bootstrap confidence intervals (based on 5,000 bootstrap samples) did not include zero (.03 to .16).

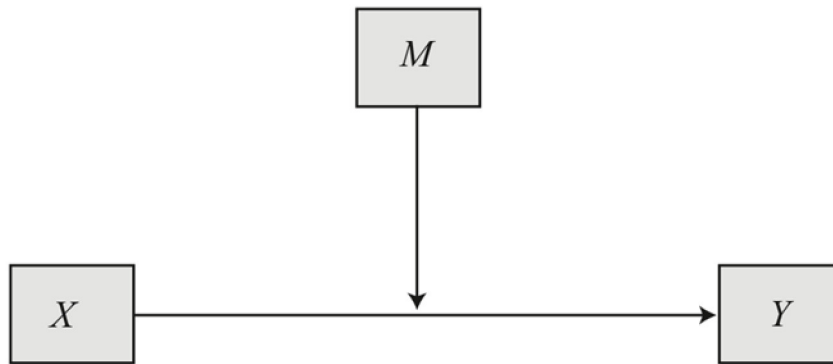


Table 6 *PROCESS Multiple Regression Model Coefficients For Acculturative Stress, Family Obligation Attitudes, Adultification, and Depressive Symptomatology*

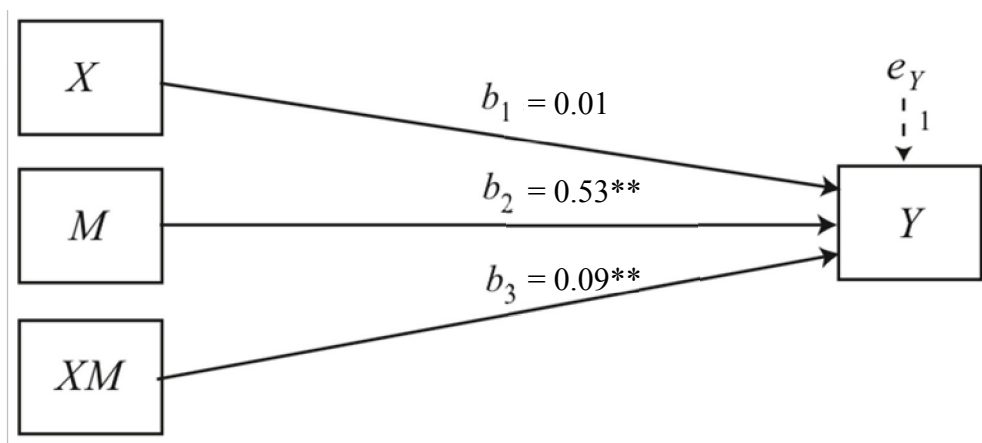
Antecedent	Consequent							
	<i>Mi</i> (Adultification)				<i>Y</i> (Depressive Symptomatology)			
		<i>B</i>	<i>SE(B)</i>	<i>p</i>		<i>B</i>	<i>SE(B)</i>	<i>p</i>
<i>X</i> (Acculturative Stress)	<i>a<sub>1i</sub></i>	0.01	0.14	0.92	<i>c'</i>	0.55	0.07	< .001
<i>W</i> (Family Obligation Attitudes)	<i>a<sub>2i</sub></i>	0.53	0.13	< .001				
<i>Mi</i> (Adultification)		---	---			0.57	0.05	< .001
<i>XW</i>	<i>a<sub>3i</sub></i>	0.09	0.03	< .001	<i>b<sub>i</sub></i>			
<i>Constant</i>	<i>i<sub>1</sub></i>	18.85	0.48	< .001	<i>i<sub>3</sub></i>	21.35	0.93	< .001
			<i>R</i> <sup>2</sup> = .16				<i>R</i> <sup>2</sup> = .52	
			<i>F</i> (3, 171)= 11.18,				<i>F</i> (2, 172)= 92.47,	
			<i>p</i> < .001				<i>p</i> < .001	

In addition, to further examine how family obligation attitudes moderate the relationship between acculturative stress and adultification, an additional analysis of Model 1 (Figure 4) was tested. The result of this simple moderation model (Figure 4, Table 7) was significant ( $F(1, 171) = 8.17, p < .01$ ) when 95% of the lower and upper bounds of bias-corrected bootstrap confidence interval did not include a zero (.11 to .62). This moderation effect was evident only when our participants expressed highly committed attitudes toward their family obligations. *That is, when family obligation attitudes were at the highest level (i.e., very traditional and indicative of high commitment and respect), they served to strengthen the effect of acculturative stress on adultification.*

Figure 4 Conceptual and Statistical Diagram of Moderation Model for Acculturative stress, Family Obligation Attitudes, and Adultification



Conceptual Diagram of Model 1



Statistical Diagram of Model 1

Table 7 PROCESS Multiple Regression Model Coefficients For Acculturative Stress, Family Obligation Attitudes, and Adultification

		<i>B</i>	<i>SE(B)</i>	<i>t</i>	<i>p</i>	
Model 1						
$R^2 = .16, MSE = 29.29$						
	Intercept	$i_1$	18.85	.48	39.58	< .001
	Acculturative stress ( <i>X</i> )	$b_1$	.01	.14	.10	.92
	Family obligation attitudes ( <i>M</i> )	$b_2$	.53	.13	4.03	< .001
	Interaction ( <i>XM</i> )	$b_3$	.09	.03	2.86	< .001

With regard to the mediation component of the model (Model 7, Figure 3, Table 6), acculturative stress was treated as an independent variable while adultification was treated as the mediator and the mental health outcomes served (in separate analyses) as dependent variables. First, depressive symptomatology was the outcome variable in the model. When looking at the output for the mediation component of the entire model, both acculturative stress and adultification were positively and significantly predictive of higher levels of depressive symptomatology ( $F(2, 172) = 92.47, p < .01$ ) with 52% of the variance explained by these two variables. By closely looking at each direct path in the model, the path from adultification to depressive symptomatology ( $B = .55, t = 7.51, p < .01$ ) and the path from acculturative stress to depressive symptomatology ( $B = .57, t = 11.67, p < .01$ ) were both significant. The existence of a partial mediation effect between acculturative stress and depressive symptomatology through adultification was indicated by the fact that the 95% of lower and upper bounds of bias-corrected confidence intervals did not include a zero (.02 to .46). Further, the existence of a significant moderated mediation effect was verified from the results of an index of moderated mediation table when 95% of lower and upper bounds of bias-corrected confidence intervals did not include a zero (.01 to .10 with a point estimate of .05,  $SE = .02$ ). Additionally, the conditional indirect effect table explained the impact of acculturative stress on depressive symptomatology at the value of family obligation. This finding showed that a Chinese immigrant offspring in our sample who holds strong family obligation attitudes and experiences a high level of adultification tends to report more depressive symptomatology.

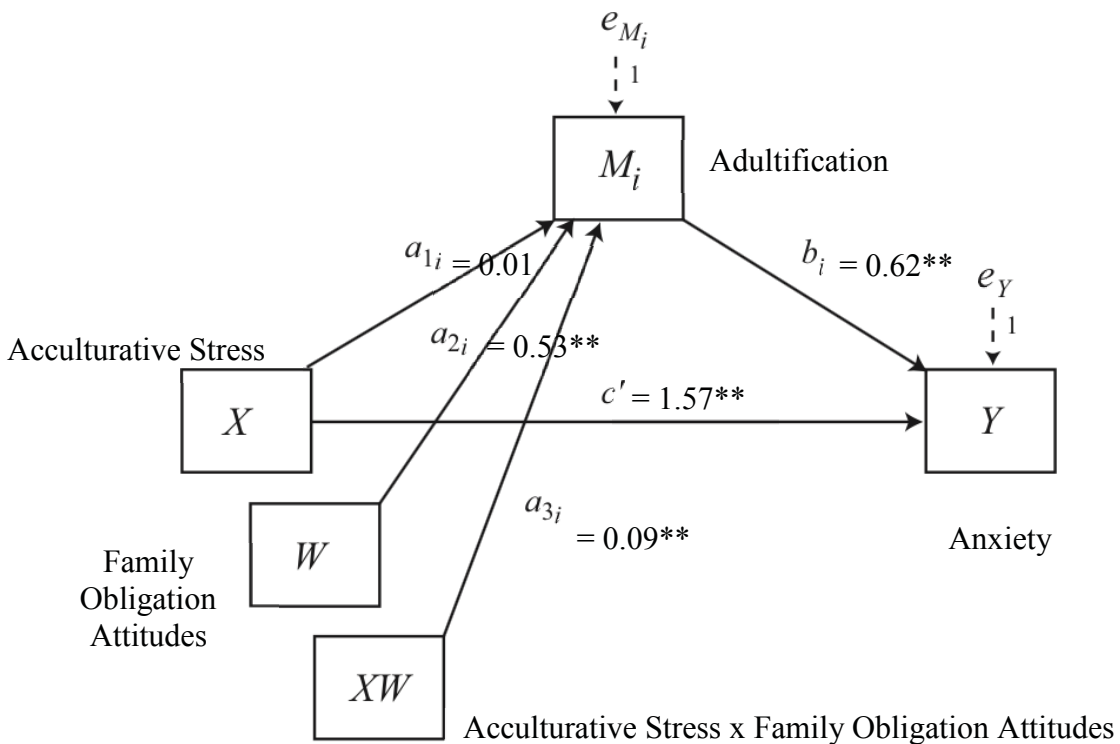
***Hypothesis 2.2: More traditional family obligation attitudes moderate the positive relationship between acculturative stress and adultification when adultification mediates the relationships between acculturative stress and anxiety.***

Similar steps and procedures of analysis for testing Hypothesis 2.1 were applied to test the Hypothesis 2.2 (Figure 5), changing the outcome variable to anxiety for the mediation component of the model. Therefore, the moderation component of the model 7 demonstrated the same results: that acculturative stress and family obligation attitudes explained 16% of variance and they were both significantly predictive of higher levels of adultification ( $F(3, 171) = 11.18, p < .01$ ). In spite of the fact that the path from acculturative stress to adultification was not significant ( $B = .01, t = .10, p > .05$ ) while the path from family obligation attitudes to adultification was significant ( $B = .53, t = 4.03, p < .01$ ), the moderation effect between acculturative stress and family obligation attitudes was present again ( $B = .09, t = 2.86, p < .01$ ). This result of moderation effect was again supported when 95% of lower and upper bounds of bias-corrected bootstrap confidence intervals (based on 5,000 bootstrap samples) did not include zero (.03 to .16).

With regard to the mediation component of model 7 for hypothesis 2.2 (Figure 5, Table 8), acculturative stress was treated as an independent variable while adultification was treated as the mediator and anxiety was the outcome variable in the model. When looking at the output for the mediation component of the entire model, 30% of variance was explained by acculturative stress and adultification and they both were positively and significantly predictive of higher levels of anxiety ( $F(2, 172) = 37.68, p < .01$ ). Further, the path from adultification to anxiety ( $B = .62, t = 4.48, p < .01$ ) and the path from acculturative stress to anxiety ( $B = 1.57, t = 7.63, p < .01$ ) were both significant. The mediation effect of adultification on the relationship between acculturative stress and anxiety was evident when 95% of lower and upper bounds of bias-corrected confidence intervals did not include a zero (.03 to .59). This result indicated that the mediation effect appeared to be evident when our participants demonstrate higher levels of

adultification experiences. This suggests that when adultification experiences were at the highest level, they served to strengthen the effect of acculturative stress on levels of anxiety. In addition, a moderated mediation effect (Figure 5) was verified from the index of moderated mediation table when 95% of lower and upper bounds of bias-corrected confidence intervals did not include a zero (.02 to .14 with a point estimate of .06,  $SE = .03$ ). Moreover, the conditional indirect effect table in the output helped to explain the impact of acculturative stress on anxiety at the value of family obligation, which suggested that Chinese immigrant offspring in our sample reported higher levels of anxiety when they strongly believe in fulfilling family obligation for their families and experience high levels of adultification.

Figure 5 Statistical Diagram of Moderated Mediation Model for Acculturative stress, Family Obligation Attitudes, Adultification, and Anxiety



Note.  $**p < .01$ .  $*p < .05$ .  $e = Residual$

Table 8 *PROCESS Multiple Regression Model Coefficients For Acculturative Stress, Family Obligation Attitudes, Adultification, and Anxiety*

Antecedent	Consequent							
	<i>Mi</i> (Adultification)			<i>Y</i> (Anxiety)				
		<i>B</i>	<i>SE(B)</i>	<i>p</i>		<i>B</i>	<i>SE(B)</i>	<i>p</i>
<i>X</i> (Acculturative Stress)	<i>a<sub>1i</sub></i>	0.01	0.14	0.92	<i>c'</i>	1.57	0.21	< .001
<i>W</i> (Family Obligation Attitudes)	<i>a<sub>2i</sub></i>	0.53	0.13	< .001				
<i>Mi</i> (Adultification)		---	---			0.62	0.14	< .001
<i>XW</i>	<i>a<sub>3i</sub></i>	0.09	0.03	< .001	<i>b<sub>i</sub></i>			
Constant	<i>i<sub>1</sub></i>	18.85	0.48	< .001	<i>i<sub>3</sub></i>	87.52	2.64	< .001
			<i>R</i> <sup>2</sup> = .16				<i>R</i> <sup>2</sup> = .30	
			<i>F</i> (3, 171)= 11.18,				<i>F</i> (2, 172)= 37.68,	
			<i>p</i> < .001				<i>p</i> < .001	

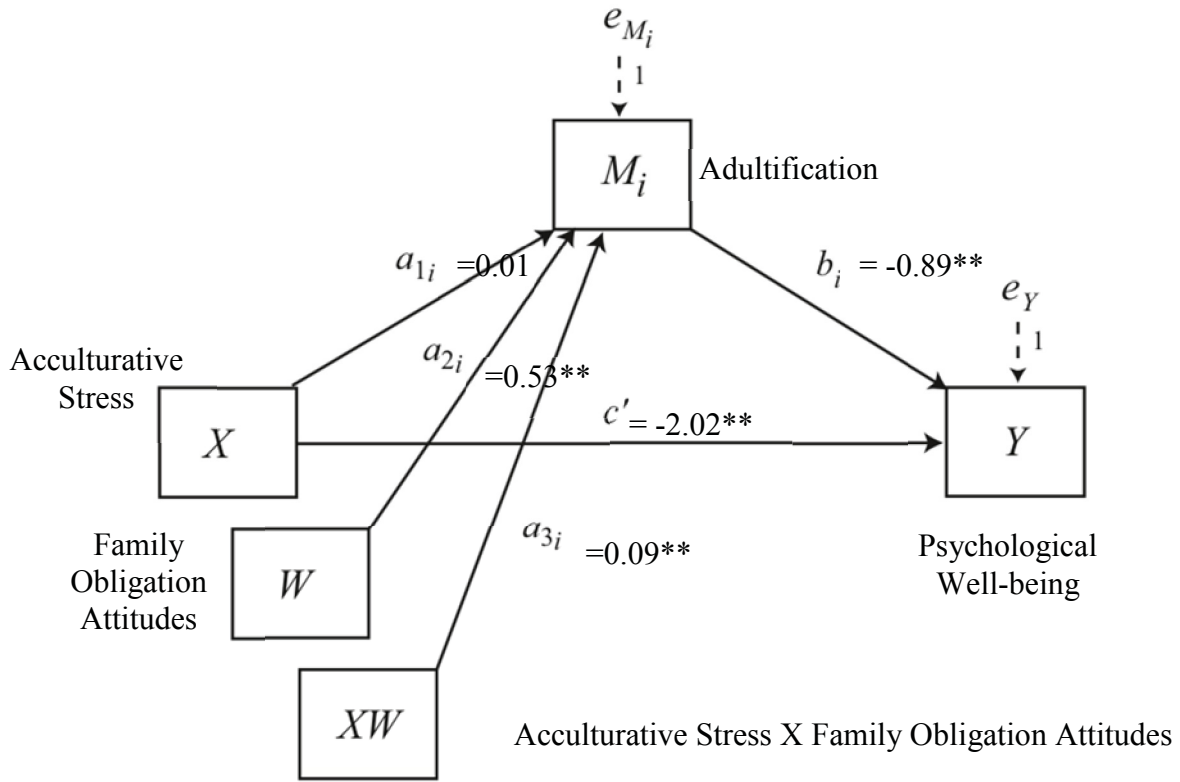
***Hypothesis 2.3: More traditional family obligation attitudes moderate the positive relationship between acculturative stress and adultification when adultification mediates the relationships between acculturative stress and psychological well-being.***

The analysis procedures for Hypotheses 2.1 and 2.2 were also applied to test Hypothesis 2.3 (Figure 6, Table 9), where psychological well-being was treated as the outcome variable for the mediation component of the model. Therefore, the same results for the moderation component of model 7 for Hypothesis 2.1 and 2.2 were presented when 16% of variance was explained by acculturative stress and family obligation attitudes and they both significantly predict higher levels of adultification ( $F(3, 171) = 11.18, p < .01$ ). The path from acculturative stress to adultification was still appeared not significant ( $B = .01, t = .10, p > .05$ ) while the path from family obligation attitudes to adultification was significant ( $B = .53, t = 4.03, p < .01$ ). Again, the moderation effect between acculturative stress and family obligation attitudes was supported ( $B = .09, t = 2.86, p < .01$ ) when 95% of lower and upper bounds of bias-corrected bootstrap confidence intervals (based on 5,000 bootstrap samples) did not include zero (.03 to .16).

The mediation component of the model for Hypothesis 2.3 (Figure 6) also treated acculturative stress as an independent variable while treating adultification as the mediator. Psychological well-being was treated as the outcome variable in the model this time. The output for the mediation component of the model indicated that 24% of variance was explained by acculturative stress and adultification and they both negatively and significantly predicted lower levels of psychological well-being ( $F(2, 172) = 27.84, p < .01$ ). Further, the path from adultification to psychological well-being ( $B = -.89, t = -4.15, p < .01$ ) and the path from acculturative stress to psychological well-being ( $B = -2.02, t = -6.38, p < .01$ ) were both significant.

The mediation effect of adultification on the relationship between acculturative stress and psychological well-being was shown to be significant when 95% of lower and upper bounds of bias-corrected confidence intervals did not include a zero (-.80 to -.04). This result indicated that the mediation effect appeared to be significant only when our participants report the highest levels of adultification. This finding addressed that when adultification experiences were at the highest level, they served to strengthen the effect of acculturative stress on predicting lower levels of psychological well-being. The moderated mediation effect was verified from the index of moderated mediation table when 95% of lower and upper bounds of bias-corrected confidence intervals did not include a zero (-.20 to -.02 with a point estimate of -.08,  $SE = .04$ ). In addition, the hypothesized impact of acculturative stress on psychological well-being at the value of family obligation were supported by the results from the conditional indirect effect table. The finding (Table 9) suggested that offspring of Chinese immigrant families tended to perceive lower levels of psychological well-being when they had strong attitudes toward family obligation and experienced high levels of adultification.

Figure 6 Statistical Diagram of Moderated Mediation Model for Acculturative stress, Family Obligation Attitudes, Adultification, and Psychological Well-being



Note.  $^{**}p < .01$ .  $^*p < .05$ .  $e = \text{Residual}$



Table 9 *PROCESS Multiple Regression Model Coefficients For Acculturative Stress, Family Obligation Attitudes, Adultification, and Psychological Well-being*

Antecedent	Consequent							
	<i>Mi</i> (Adultification)			<i>Y</i> (Psychological Well-being)				
		<i>B</i>	<i>SE(B)</i>	<i>p</i>		<i>B</i>	<i>SE(B)</i>	<i>p</i>
<i>X</i> (Acculturative Stress)	<i>a<sub>1i</sub></i>	0.01	0.14	0.92	<i>c'</i>	-2.02	0.32	< .001
<i>W</i> (Family Obligation Attitudes)	<i>a<sub>2i</sub></i>	0.53	0.13	< .001				
<i>Mi</i> (Adultification)	---	---	---	---		-0.89	0.21	< .001
<i>XW</i>	<i>a<sub>3i</sub></i>	0.09	0.03	< .001	<i>b<sub>i</sub></i>			
Constant	<i>i<sub>1</sub></i>	18.85	0.48	< .001	<i>i<sub>3</sub></i>	180.96	4.06	< .001
			$R^2 = .16$				$R^2 = .24$	
			$F(3, 171) = 11.18,$				$F(2, 172) = 27.84,$	
			$p < .001$				$p < .001$	

Overall, the second phase of the multiple regression analyses with PROCESS macro when using 5,000 resampling bootstrap strategy provided the evidence to support our hypotheses that there is a significant moderated mediation effect through family obligation and adultification on the relationships between acculturative stress and three outcome variables (depressive symptomatology, anxiety, and psychological well-being; see Figure 3, 5, and 6 and Table 6, 8, and 9). There is also evidence of partial mediation when adultification levels are at their highest. Unlike the insignificant result derived from the hierarchical regression analysis with bootstrapping strategy for psychological well-being, without the interference of contextual variables (gender, number of siblings, generational status, and family structure) in mediation analysis, the impact of adultification on psychological well-being became significant when acculturative stress was still included in the model.

In conclusion, the findings suggested that Chinese immigrant offspring who were simultaneously under greater amounts of acculturative stress and experience much more adultification within their families tend to report higher levels of depressive symptomatology and

anxiety, and perceived lower levels of psychological well-being. Although in our Model 1 testing, more acculturative stress did not significantly predict higher levels of adultification, an evident moderation effect was supported when strong attitudes toward family obligation and high commitment and respect for families resulted in more adultification experiences. In the mediation component of Model 7, the mediation effect was evident when adultification experiences were at their highest level and served a strengthening effect on acculturative stress's impacts on higher depressive symptomatology and anxiety, and lower levels of psychological well-being.

## CHAPTER FIVE

### Discussion

#### Overview

The present study sought to elucidate the connections between acculturative stress, family obligation attitudes, perceptions of adultification, and mental health outcomes among Chinese immigrant young adults. Results of the present study partially supported the hypothesized relationships summarized in the conceptual model (Figures 1 & 2). A moderated mediation effect occurs when family obligation attitudes are at their highest level (i.e., highly committed to family obligations and collective responsibility) and high levels of family obligation attitudes strengthen the relationship between acculturative stress and perceptions of adultification. In practical terms, this finding suggests that acculturative stress most likely contributes to perceptions of adultification only in conjunction with Chinese young adults' strong sense of family obligation. Further, with regard to mental health outcomes, significant mediation occurs when adultification experiences are at their highest level. That is, the effects of acculturative stress on mental health outcomes are direct, and also indirect when adultification perceptions are at their highest. Chinese immigrant young adults with elevated levels of perceived adultification experience the mental health effects of acculturative stress via heightened adultification (that is, acculturative stress predicts adultification which in turn impacts mental health). This chapter will elaborate on these key findings and discuss the implications of adultification on facets of Chinese immigrant young adults' mental health. Burton's conceptual model of childhood adultification and her proposal of successive forms of adultification will be applied and discussed based on the findings in this study. Additionally, family stress theory will guide the discussion of the findings regarding how adultification might

be considered as a response to perceived acculturative stress among Chinese offspring and a mechanism of effect with regard to acculturative stress. Further, the emphasis on family meaning (Boss, 2002; McCubbin & Patterson, 1983; Patterson, 2002) will help explain how Chinese immigrant young adults define the perceived stress and adultification experiences based on their cultural and familial beliefs and contexts (e.g., family obligation attitudes). Family stress model helps to frame the contributions of demographic characteristics (e.g., gender, sibling size, parental capital, and family income levels) in explaining the psychological distress and well-being of Chinese immigrant offspring. Further, two life course theory principles, linked lives and human agency, are applied to explain the idea that how early experience and family context might influence Chinese immigrant young adults development on identity formation when entering early adulthood. Strengths and limitations of the current study as well as directions for future research will be discussed.

### **Adultification and the Mental Health of Chinese Immigrant Young Adults**

Consistent with previous research findings that adultification experiences predict more depressive symptomatology and higher levels of anxiety (Hooper, 2007; Hooper et al., 2015), both phases of my multivariate analyses verified that Chinese immigrant young adults who perceive more adultification experiences tend to show more depressive symptomatology and report higher levels of anxiety. Although the hierarchical regression analysis did not find adultification to be significantly predictive of lower psychological well-being (likely due to the overshadowing of demographic variables, which explained a good proportion of the variance on psychological well-being), the PROCESS modeling (which excluded demographic characteristics variables) confirmed adultification as both a mediator and direct contributor to depressive symptomatology, anxiety, and lower levels of psychological well-being. These

findings align with past research pertaining to depressive symptomatology (Hua & Costigan, 2012) and also extend the research to other mental health outcomes and give a better understanding of how acculturative stress may impact Chinese immigrant young adults.

In thinking about why adultification might mediate the effects of acculturative stress only at the highest levels, Burton's (2007) model may offer some insight. Results from the mediation analysis reveal that the mediation is only significant when adultification levels are at the highest third of scores. (PROCESS breaks the scores into low, median, and high categories of adultification). Burton (2007) argues that adultified behaviors vary in degree depending on the amount, length, and density of the exposure of adult-like roles and responsibilities that offspring take on, and mental health outcomes resulting from different degrees of adultification vary as well (Burton, 2007; East, 2010; Jurkovic, 1997), with negative outcomes most likely when adultification is intense and progressed. For example, according to Burton (2007), "parentification" is the highest successive form of adultification; other researchers suggested that this form of adultification is almost always destructive, and is very likely to result in detrimental effects on the offspring's mental health outcomes (Burton, 2007; Jankowski et al., 2011; Jurkovic, 1997).

Based on the current study, among the three different levels of adultification examined in the PROCESS regression model (e.g., low, median, and high), the highest level of perceived adultification has a mediation effect on the impact of acculturative stress on the three mental health outcomes. The highest level in the PROCESS analyses may parallel Burton's parentification concept. In addition, research suggested that serving full-time parental roles for siblings and parents could be beneficial for young adults in obtaining life skills, becoming more mature, and being ready to enter society. However, playing multiple family roles (e.g., confidant,

advocate for the family, provider) without parental guidance within disadvantaged family (where the family has a disruptive familial hierarchy and enmeshed boundaries) all greatly compromised the healthy development of identity formation, emotional expression, and relationships with others (Burton, 2007; Hooper, 2007; Hooper et al., 2015; Jurkovic, 1997). Thus, the findings of present study are consistent with the existing literature that adultification experiences, especially when extreme (i.e., parentification), not only have detrimental effects on young adults' mental health status in Chinese immigrant families, but also are a pathway for acculturative stress to undermine young adults' mental health.

Both the first and second-phase of multivariate analyses confirmed that adultification experiences resulted in higher psychological distress (i.e., depressive symptoms and reported anxiety). This effect seemed to be the case even when demographic characteristics variables were controlled for (model 2 of the hierarchical regression analyses). Adultification experiences also appeared to be significantly predictive of poorer psychological well-being. Hence, the current study findings confirm previous research findings in that adultification experiences resulted in higher levels of psychological distress and lower levels of psychological well-being (Hooper et al., 2015; Hua & Costigan, 2012). The findings also point to the heuristic value of including several facets of mental health. When I closely examined the impact of adultification on young adults' mental health outcomes, variations in explanatory power, as well as the configuration of significant demographic variables, were found among three mental health outcomes: depressive symptomatology, anxiety, and psychological well-being. According to the findings of the present study, adultification seems to predict depressive symptomatology better than it predicts anxiety and psychological well-being.

What accounts for these heterogeneous effects? Depressive symptomatology and anxiety are both considered types of mood disorders and share many common symptoms with each other; taken together, they are also considered to represent the emotional state of an individual (Swartz, 2012; Waston, Clark, & Carey, 1988). However, they overlap, but are still different types of emotional states. Although shared symptoms and comorbidity of the two types of mood disorder often occur simultaneously, anxiety is often characterized by a sense of doubt and vulnerability about future events, while people with depressive symptoms are not preoccupied and worried about what might happen to them in the future; instead, they think they already know what will happen, and are concerned about what is happening to them right now (Cohen, 2007). Each form of distress is comprised of the negative affectivity (NA) and positive affectivity (PA) components of emotional states. NA is a general factor that reflects the subjective distress and the negative emotional states of the individual whereas PA is a dimension that reflects one's level of pleasurable engagement with the environment, including enthusiasm, energy levels, mental alertness, interests, joy, and determinations at the time of assessment (Waston, et al., 1988).

Anxiety is predominantly an NA mood state, while depressive symptomatology is comprised of a mixed state of both NA and a lack of PA (Ridner, 2004; Waston et al., 1988). Therefore, according to the composition and symptoms that characterize anxiety and depressive symptomatology, Tellegen (1985) and Waston, Clark, and Carey (1988) argued that the lack of a PA component (e.g., lack of interest and enjoyment in activities that used to be fun and interesting) is crucial for differentiating depressive symptomatology from anxiety. In addition, research also showed that psychological well-being is negatively associated with depression and anxiety but is quite distinct from them in that it is not apparently the cause or result of these two

negative emotional states (Liu, Shono, & Kitamura, 2009). Therefore, I argue that Chinese immigrant young adults' perceptions of adultification hold different explanatory power in depressive symptomatology, anxiety, and psychological well-being because these mental health outcomes are tapping into very different mood states. While perceived adultification experiences connect to all three outcomes per the conceptual model, the model best predicts depressive symptomatology over anxiety and psychological well-being. It may be then that adultification taps more into past and current worries, concerns, and sad feelings of Chinese immigrant young adults at the time of assessment and is slightly less predictive of the stress, concerns, and worries about the future. Hence, this current finding resonates with the existing literature that, because of the diverse facets of mental health outcomes, these mental health outcomes should not be conceptualized and measured solely as a single construct (Ridner, 2004; Watson et al., 1988). Also, this study's findings suggest that adultification experiences result in myriad aspects of mental health outcomes, including both negative components (e.g., depressive symptoms and anxiety) and an absence of positive components (e.g., psychological well-being).

On the other hand, according to the study finding, lower levels of adultification did not significantly mediate the impact of acculturative stress to mental health outcomes, and this result may likely suggest that lower levels of adultification experience did not lead to poor mental health outcomes. This study finding may indicate that adultification experiences do not always predict poor mental health outcomes, and various degrees and amounts of family assisting behaviors may have different implications on the mental health of Chinese immigrant young adults. Hence, there is a need to figure out what is the normal expectation and appropriate amount of labor within Chinese immigrant families. There is a necessity to understand how these young adults discuss and define the "normal expectation" and the appropriate "weight of



labor” within Chinese immigrant families. I would like to emphasize the importance of clarifying the actual meanings of how these young adults consider their family assisting behaviors as adultification experiences within Chinese familial cultural context. Based on their perceptions and definitions associated with their ethnic and cultural socialization within the family (Hughes et al., 2006) under a certain amount of labor, these family assisting behaviors are normally expected within Chinese immigrant families; beyond a certain amount of labor, family assisting behaviors are perceived as adultification experiences for these young adults.

### **Acculturative Stress and the Mental Health of Chinese Immigrant Young Adults**

As several existing studies have shown, Asian groups tend to report higher rates of psychological distress due to their greater vulnerability to experiences of acculturative stress (Barlow, 2002; Crockett et al., 2004; Gu, 2006; Jurkovic et al., 2004) when compared with their Caucasian counterparts. The present study also confirms that acculturative stress is predictive of higher depressive symptomatology, higher levels of anxiety, and poorer psychological well-being among Chinese immigrant offspring. In addition, according to the literature, acculturative stress may arise from various sources; some appears to be short-term (acute) and some tends to be long-term and chronic stressors, and they are likely to be derived from minority status and social acceptance issues (Hwang & Ting, 2008). These chronic stressors may continually manifest in signs of mental health outcomes among Chinese immigrant young adults. According to Coll and Szalacha’s research (2004) conducted among children and youth of color and of immigrant backgrounds, their development can be negatively impacted by the conflicts between societal and institutional ideologies and their familial and cultural values. Also, children and youth of color and of immigrant background who grew up and resided in a middle-class neighborhood with sufficient and stable economic resources may still likely experience racism

and social acceptance issues as the community does not protect them from exposure to prejudice, discrimination, and segregation related to their minority status within or outside of the community (Coll & Szalacha, 2004). Therefore, as family stress does not derive from a single source and may coexist with other stressors and events, such as the minority stress and racism issues (long-term and chronic stressors), in influencing the development and mental health status among immigrant young adults, the literature indicated that more acculturated immigrants may become more realistic about American society and become more aware of and concerned about the discrimination and social acceptance issues that come from their minority status (Gu, 2006).

Therefore, based on the findings of the present study regarding the predictive relationships between acculturative stress and poorer mental health outcomes and the life course theoretical framework, I suggest that it is important to consider the possibility that these young adults may experience various types of stressors at different stages and times in their lives. For they may not only simultaneously or in their later lives encounter stressful events such as transitioning into early adulthood, entering college, and being away from home and family but are also continually dealing with the stress related to acculturation and their minority status. The transitions to entering adulthood or college may thus increase their likelihood of reporting more depressive symptomatology, higher anxiety, and lower psychological well-being (Clark, 2005). Therefore, I also would like to address the importance of differentiating the influences of various stressors including acculturative stress, minority stress, and stress derived from entering adulthood on the mental health outcomes of Chinese immigrant young adults.

## **Acculturative Stress, Family Obligation Attitudes, Adultification, and the Mental Health of Chinese Immigrant Young Adults**

### **Acculturative stress, family obligation attitudes, and adultification.**

Based on the results of the conceptual model, there is an evident moderating effect of family obligation attitudes on the impact of acculturative stress on adultification experiences. This moderation effect strengthens the impact of acculturative stress on adultification experiences, especially when Chinese immigrant young adults held the strongest traditional family values concerning fulfilling family duties. This finding suggests that immigrant young adults who experience more acculturative stress while feeling highly committed to their families (i.e., showing more respect towards their families and valuing the importance of staying close with families), are much more likely to report more adultification experiences.

The previous literature indicated that family cohesion and family support moderate the effect of acculturative stress on mental health, and thus the present study predicted that family obligation attitudes may also serve as protective factors in decreasing the impact of acculturative stress on adultification experiences among Chinese immigrant young adults (Roley et al., 2014). According to the current findings, family obligation attitudes were found to have a moderation effect on the impact of acculturative stress on adultification experiences when young adult immigrants held strong and traditional Chinese attitudes toward family obligations; however, this moderation effect was not necessarily “protective.” Rather than decreasing the impact of acculturative stress as expected (i.e., cultural values serving a protective function), traditional Chinese cultural values served to intensify the impact of acculturative stress on adultification experiences when immigrant young adults held the strongest family obligation attitudes toward their families. Though this finding contradicts our expectation that Chinese immigrant young adults may perceive or reframe their interpretations of adultification experiences differently based on their traditional family beliefs and values, it is consistent with past findings that more

frequent adultified behaviors were associated with a stronger sense of family duties to assist and support the family among immigrant young adults (Fuligni et al., 1999).

In addition, due to overpopulation in China, the Chinese government introduced the one-child policy in late 1970s and restricted married couples to only one child (Chuang, 2013; Fuligni & Zhang, 2004). The policy successfully changed the size and structure of Chinese families, and yet, unfortunately, the drastic change of family structure ultimately intensified the desire and preference of Chinese parents to have a son over a daughter (Chuang, 2013). The one-child policy not only resulted in severe gender imbalance issues but also reshaped the composition of the Chinese families into a four-two-one structure (four grandparents with two parents and one child within the family), which may likely put more responsibilities and obligations on the only child within the families. Based on the pattern of my study sample (more only children than ones with more than one sibling and more males than females) and the family composition suggested by literature, the Chinese young adults who are male only children may likely to have stronger sense of duty in supporting their families due to the fact that they are the only child in the families and thus may likely perform more assisting and adultified behaviors for their families (Fuligni & Zhang, 2004).

#### **Family obligation attitudes, adultification, and mental health outcomes.**

Emerging adulthood is characterized as a period of time when young adults develop increased independence and greater autonomy, and young adults may become less connected with their families (Arnett, 1998). However, Fuligni and Pederson (2002) indicated that an increased sense and attitude of duty to support, respect, and assist the family were observed in their study as these young adults obtained a greater awareness of their roles in the families. Fuligni and Pederson (2002) also suggested that this increased sense of duty in assisting and

supporting families results in a greater amount of support provided to the families--the enactment of which may be in part what has typically been seen to constitute adultification. Moreover, research also showed that this heightened attitude toward family obligation also demonstrated a continued impact of traditional cultural values on the development of young adults (Fuligni & Pederson, 2002). Within Chinese immigrant families, parents also place greater expectations and demands on immigrant young adults given the fact that these grown-up young adults now have the capability and responsibility to bring benefits and honor to the families (Fuligni & Pederson, 2002; Park, 2005; Zhou, 2009). Therefore, based on the discussion above, the current study findings are consistent with the existing literature that strong family obligation attitudes manifest as strengthening the effect of the impact of acculturative stress on adultification among Chinese immigrant young adults.

It is interesting to consider Chinese offspring's experiences of acculturation, family obligation, and adultification in terms of key principles of human agency and linked lives based on life course theory. As suggested by previous literature, young adulthood is characterized by increased autonomy and exploration of adult roles (Arnett, 2000). Further, Fuligni and his colleague, Pederson (2002), indicated that young adults demonstrated an even stronger sense of duty to assist and support their families as they gradually become more self-reliant and independent as they transition into early adulthood. Their performance of adultified or family assisting behaviors was not only shaped by their Chinese familial values cultivated earlier in their lives, but also increased and became emphasized as they obtained greater autonomy to make personal decisions and were more involved in decision-making processes in their families due to their age and maturity. However, due to the young adults' maturity, their transition into emerging adulthood, and the traditional family values within Chinese immigrant families, their

parents may alter their attitudes and have *higher* expectations of the offspring and thus place more responsibilities on them than parents did when these offspring were children. Hence, according to Fuligni and Pederson (2002) as well as Bernard (2010), these young adults may feel more important and may focus more on their family roles because this greater sense of family obligation is likely to provide them with a better sense of identity and purpose in life while being away from families for college and work (Fuligni, 1998; Fuligni & Pederson, 2002). While the present study does not test for differences between young adults and children, it does help situate a focus on emerging adulthood as a critical developmental period for Chinese immigrant offspring characterized by acculturative stress, family obligations, and perceived adultification.

Further, research showed that the values of family ties and closeness are beneficial in decreasing psychological distress among immigrants and may help them succeed during the adaptation process (Gu, 2006, pp. 22-23). A study conducted among Latino and East Asian ethnic groups also suggested that stronger cultural values and attitudes toward family obligations are associated with positive emotional well-being and greater satisfaction in family relationships (Fuligni et al., 1999). However, young adults who hold more traditional family values may place greater importance on their roles in the families, causing them to feel pressure; further, failure to perform the designated role or to bring honor on the families may greatly contribute to poorer psychological distress outcomes among immigrant young adults (Hua & Costigan, 2008; Park, 2005).

The present study indicates that a strong sense of duty to support and assist families may lead to more adultification experiences and thus may engender poorer mental health outcomes; nevertheless, due to inconsistency in the existing literature, further research on the implication of

family obligation attitudes on the impact of adultification on the mental health outcomes among Chinese immigrant young adults is required.

### **Demographic Characteristics and the Mental Health of Chinese Immigrant Young Adults**

Based on the family stress model (Conger & Donnellan, 2007) and Burton's (2007) conceptual model of childhood adultification, contextual factors (demographic characteristics) are more likely to contribute to various stressors and demands as well as the occurrence of adultification experiences, which may likely have an impact on the development and well-being of individuals and families. Therefore, the present study also looked at the associations between demographic characteristics and the mental health outcomes of Chinese immigrant young adults. The findings of the present study show that among all the demographic characteristics variables, gender, sibling size (number of siblings), and levels of family income are strong predictors of young adults' mental health.

#### **Gender and sibling size.**

While females demonstrate poorer mental health status according to the existing literature, the present study shows, in opposition to this, that Chinese immigrant male young adults tended to report more depressive symptomatology, higher levels of anxiety, and lower levels of psychological well-being (Gu, 2006; Hilario, Vo, Johnson, & Saewyc, 2014). However, when it comes to both gender and sibling size, I discovered that male young adults also tended to be the first or the only children in families with higher employment rates at the time of assessment. Independent t-test analyses revealed that these Chinese male immigrant young adults tended to report more economic stress ( $t = 8.42, p < .001$ ) and reported higher scores on adultification ( $t = 4.70, p < .001$ ) when compared with their female counterparts. Therefore, I argue that Chinese male immigrant young adults in the present study demonstrate a greater vulnerability to negative

mental health outcomes due to the greater propensity for them to be the first or only children and perhaps economic providers within the families. Aligned with previous discussion regarding the consequences of the one-child policy, males are less likely to have siblings and thus the burden of family support is more likely to fall on male offspring, which could translate into a greater sense of family obligation and awareness of the needs of their families (Fuligni & Zhang, 2004). Further, a greater sense of family obligation was also found among male immigrant young adults ( $t= 7.84, p < .001$ ) and thus greater male vulnerability to psychological distress could also stem from patriarchal ideology that being a man in the household means taking on the responsibility of playing a provider role in the family (Ishii-Kuntz, 2000). Moreover, with the emphasis of upward mobility for social acceptance and the importance of bringing honor to the family, males and the first or only children may have greater responsibilities and expectations placed on them by themselves and the parents, which may result in greater stress and poorer mental health outcomes (Fuligni & Pederson, 2002; Fuligni & Zhang, 2004; Park, 2005; Zhou, 2009).

### **Generational status.**

Interestingly, the present study demonstrates that young adults who identified as second- or multiple-generation (i.e., Chinese immigrant offspring who were born in the United States) reported less acculturative stress but higher levels of depressive symptomatology and anxiety, as well as being associated with poorer psychological well-being. There is some incongruence in the existing literature with regard to the discussion of generational status, acculturative stress, and mental health outcomes. In that literature, some have suggested that higher levels of mental health distress were found among highly acculturated immigrants, while some other researchers indicated that more acculturated immigrants reported decreased psychological distress outcomes (Gu, 2006; Kaplan & Marks, 1990; Schnittker, 2000). Although the present study did not point to



a causal predictive relationship between generational status, acculturative stress, and mental health outcomes, the negative associations between generational status and acculturative stress and the positive association between generational status and mental health outcomes may warrant further study to gain a better understanding of the relationships among these three variables of interest.

### **Family income level.**

Regarding the association between family income levels and mental health outcomes, immigrant young adults in the present study tended to grow up in middle- to high-income families, which did not suggest disadvantaged economic family circumstances as is discussed in the literature on adultification with various ethnic groups (Burton, 2007; Parke et al., 2004; Roy et al., 2014). Although high family income levels did not contribute to economic stress on immigrant young adults, higher family income levels also did not suggest the absence of perceived economic stress and responsibilities of serving the provider role as a male within a patriarchal household. However, in the present study, higher family income levels, consistent with the existing literature, have significant predictive relationships with better mental health outcomes among Chinese immigrant young adults. Have that being said, further examination and verification of the implications of gender differences and the role of socioeconomic status on mental health outcomes among Chinese immigrant young adults is much needed in future studies.

### **Strengths and Limitations of the Study**

The present study extended previous research by advancing a processual model of moderated mediation which points to the consideration of how strong Chinese family obligation attitudes intensify the effect of acculturative stress on adultification as well as the mediating role of adultification experiences as a pathway of effect with regard to how acculturative stress

affects three mental health outcomes among Chinese immigrant offspring. In addition, the present study also discovered that this moderated mediation effect only occurs when Chinese immigrant young adults hold the strongest sense of duty to assist and support their families and experience the more intense form of adultification (i.e., parentification, per Burton, 2007). Regarding the variation of prediction results on depressive symptomatology, anxiety, and psychological well-being, the present study also provides a careful and comprehensive perspective in examining and discussing the impacts of adultification and acculturative stress on multiple dimensions of mental health among Chinese immigrant young adults.

However, in addition to its strengths and contributions, the limitations of the present study should also be considered. The design of the present study was cross-sectional, and participants were surveyed at a particular point in their lives. Although the study was meant to understand the current mental health status of these Chinese immigrant offspring based on their self-reported experiences of acculturative stress and adultification, the nature of the cross-sectional design did not permit us to make definite causal conclusions regarding the impact of acculturative stress and adultification experiences on overall young adult mental health status.

In addition, due to the difficulties of recruiting an appropriate sample size for later analysis, recruitment flyers and letters were sent to more than twenty organizational and institutional listserves as well as posted on several social media websites; therefore, the actual response rate was hard to calculate and the reasons individuals may have chosen not to participate in or withdrawn from the study was unclear. Thus, it is unknown if participants in the present study are systematically different than those who did not respond to the survey. Further, the lack of socioeconomic diversity in the sample may have bearing on the generalizability of the findings. Future research would benefit from incorporating a sample of more diverse

socioeconomic status backgrounds compared with this study's participants, who mainly grew up in higher-income families. However, the homogeneity of the financial status of participants (i.e., most were middle class or more well off) does lessen the need to statistically control for the interference of financial stress and focus more on the variables of interests for better understanding of their processual relationships.

Another limitation of the present study involves its reliance on solely retrospective self-reported questionnaires and scales. Thus the reader is cautioned from drawing causal conclusions purely based on these intrapersonal reports (McDonald, 2008). However, the present study was designed to investigate participants' perceptions and interpretations of their individual experiences with regard to acculturative stress and adultification as well as their perceived evaluation of their mental health status at the time of assessment. The study goal was to measure and assess the influences of traditional Chinese family values on their perceptions and experiences and brings the richness of the information from the perspectives of participants (Paulhus & Vazire, 2007).

In addition, the present study was unable to utilize more culturally appropriate scales and questionnaires to measure and provide a more accurate depiction of participants' perceived adultification experiences and attitudes toward family obligation attitudes within Chinese familial contexts. Further, with regard to Parentification Inventory (PI), one of the subscales mainly asks participants to report their sibling-focused adultification experiences. Given my study sample were mostly only children, PI may not be able to accurately and fully depict the adultification experiences of these only child Chinese immigrant young adults. Therefore, I would like to suggest that future research should incorporate and utilize measures that are

adapted to and are more appropriate to Chinese culture for assessment and instrumentation to avoid and reduce false and inaccurate depictions.

### **Future Directions for Research**

Findings from the present study support a number of future directions for research. For instance, the study findings indicate that adultification experiences resulted in various aspects and different levels of mental health outcomes. Further study aimed at examining what contributes to this variation may help family scholars to understand what types and forms of adultification experiences account for which aspects of mental health outcomes and thus may better prevent children, adolescents, and young adults among immigrant families from exposure to the more harmful forms of adultification. Future research could include multiple informants (e.g., dyad parent-child relationships) in the study to reflect on their attitudes toward family obligation. The inclusion of multiple informants may foster the verification and exploration of young adults' reports on their attitudes toward family obligation; it is at this point unknown whether it is a reflection of their internalized beliefs and values or is the extended and projected belief systems of their parents or their entire families. Previous research showed that holding strong or weak attitudes toward family duties and obligations between parents and children may result in greater family conflict as well as a greater acculturation gap, which may engender the psychological well-being of and decrease family satisfaction among family members (Hua & Costigan, 2012; Jankowski et al., 2011; Roley et al., 2014; Weisskirch, 2013). In addition, longitudinal research examining the implications of family obligation values on young adults' development and mental health over time is needed as family obligation values may have very different implications based on the development, stage, and familial context of an individual (Arnett, 1998; Fuligni & Pederson, 2002). Further, I would also suggest collecting qualitative

narratives from immigrant young adults in conjunction with existing quantified survey data to provide a more in-depth understanding of the occurrence and process of reframing or exacerbation of family obligation attitudes and adultification experiences on mental health status among Chinese immigrant young adults.

### **Implications**

Current findings of the present study may point to important directions for family scholars, practitioners, and community educators when working with Chinese immigrant young adults and their families. Based on individual differences and cultural variations, when attending to young adults of Chinese immigrant families, family professionals should be aware of the unique familial contexts as well as the specific developmental stage of these young adults as they transition to early adulthood. According to life course theory, early childhood experiences and how children being socialized within families may influence and shape the lives of individuals in their later lives when entering adulthood (Bengston & Allen, 1993; Kasuga-Jenks, 2013), and parents' decisions, parenting, and parental and familial expectations are likely to cultivate and construct the values and beliefs of individuals. Therefore, I would like to not only remind family professionals to be attentive to the collectivistic familial worldview adopted by Chinese immigrant young adults, but also to be aware of the specific developmental stages these young adults are experiencing at the moment. Also, family scholars and health service providers should be sensitive to individual perceptions and interpretations of young adults' past and current acculturation and adultification experiences, as well as be cautious when discussing, assessing, and interpreting the mental health status when working with Chinese immigrant young adults.

A strength-based family resilience perspective as advanced in the family stress theory may also imply the path and potentials of post-stress or post-traumatic growth among immigrant

young adults (Hooper et al., 2015; Joseph, 2011, pp. 117-162). Joseph (2011) explained that individuals who grow around their injuries following the adversity they experienced appear to reconfigure their “sense of self, views on life, priorities, goals for the future, and their behaviors” in positive ways in the light of their past experiences, and it is these changes that he refers to “posttraumatic growth.” (p. 69). Therefore, regardless of the stress, discrimination, or extreme forms of adultification experienced during the acculturation processes, one can very likely develop “posttraumatic growth” and become more resilient and acquire more strength afterwards.

On a similar note, family scholars, practitioners, and educators should move away from a pathologized perspectives and pay less attention to the negative outcomes that result from adultification experiences, while helping immigrant young adults focus on reconfiguring and reframing their experiences along with their newly developed skills and abilities from their earlier adultified or acculturated experiences. Given the mediating role of adultification as a pathway for acculturative stress to influence mental health outcomes, in conjunction with the moderating role played by family obligation attitudes, the present study verifies that immigrant young adults have poorer mental health outcomes if their adultification experiences are intensified by their strong sense of duty to assist families. Therefore, I suggest that family professionals work with Chinese parents in recognizing and appreciating the fulfillments and contributions of immigrant young adults and that they remind parents to provide timely support and guidance when assigning appropriate amounts of family obligations and adult roles for immigrant young adults (Weisskirch, 2010; Winton, 2013). In doing so, family scholars and practitioners could reduce the negative outcomes of adultified behaviors through reconstructing the meanings attached to adultification experiences and strengthening parent-child relationships within Chinese immigrant families.

Further, as acculturative stress may have different impacts on immigrant young adults' mental health outcomes depending on their generational status, family professionals should also be aware of the influences of the developmental stages and familial contexts in understanding the sources and contributions of acculturative stress and family demands experienced by immigrant young adults. Moreover, while Burton (2007) argued that community cohesion could be a crucial predictor of adultification outcomes, Gu (2006) also indicated that the ethnic networks and community ties are beneficial in easing acculturative stress and reducing mental health. While community ties and cohesion may be advantageous in preventing or reducing levels of acculturative stress and adultification experiences, the collectivistic notions of Chinese cultural stigmas concerning mental health illness may prevent young adults from seeking professional help (Gu, 2006). In addition, as Chinese immigrant young adults strive to acculturate to the host culture while holding their traditional Chinese family values, the possibility of developing an integrated individualistic and collectivistic worldview is likely to occur among Chinese immigrant young adults (Gu, 2006; Hahn, 2010). Thus, family scholars and practitioners should abandon their homogeneous assumptions when working with Chinese immigrant young adults and be more culturally sensitive and competent in recognizing the variations of cultural and familial worldviews held by individuals in order to influence the acculturation process and mental health status of Chinese immigrant young adults.

### **Conclusion**

In conclusion, the present study aimed to examine the implication of adultification experiences on Chinese immigrant young adults' mental health status. The present study also sought to understand the processual relationships between acculturative stress, family obligation attitudes, adultification experiences and mental health outcomes of Chinese immigrant young

adults. I found that immigrant young adults with a strong sense of Chinese collectivistic familial value tend to exacerbate the impact of acculturative stress on adultification experience, which then results in a higher frequency and greater amount of adultification experiences among Chinese immigrant young adults. Further, the present study also discovered that high levels of adultification mediated the relationship of acculturative stress on mental health outcomes. Given the homogeneous assumptions about Asian populations in the existing literature, the current study finding is able to offer invaluable insights on the influences of Chinese family obligation attitudes on Chinese immigrant young adults' acculturative stress and adultification experiences. Further, the present study raises the important question of why there are variations of mental health outcomes resulting from adultification experiences and what accounts for these differences. In addition, the current study not only reinforces the previous findings that a stronger sense of duty to assist their families results in a greater number of adultification experiences, but also opens the door for further examination and discussion concerning whether the stronger sense of family obligation is cultivated and reinforced by traditional Chinese family culture or is increased due to the transition into emerging adulthood among Chinese immigrant young adults. With respect to the growing Asian population in the U.S., particularly Chinese immigrant families, future research is needed to contribute to more in-depth understanding of this marginalized population.



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## TABLES

Table 10 *The Conceptualization, Operationalization, and Measurements of Study Constructs*

Constructs	Operationalized Definitions	Coding & $\alpha$ Level of Measurements
Independent Variables		
Demographic Characteristics		
Age	Participants' self-identified age	
Gender	The self-identified sex of the participants	1= Male 2= Female
Nationality	Participants' self-identified nationality	1= Chinese and Taiwanese 2= Chinese and Taiwanese Americans or Americans
Generational Status	Participants' self-identified first- or second-generation	1= 1 <sup>st</sup> -Generation 2= 2 <sup>nd</sup> - or Multiple-Generation
Numbers of Sibling	Participants' self-reported sibling size	1= Only Child 2= More than one sibling
Family Structure	Participants' self-reported family compositions	1= Two-Parent Married-Couple Families 2= Single-Parent and Grandparent-led Families
Employment Status	Participants' self-reported current employment status	1= Currently is not employed 2= Currently is employed with some kind of job 3= Currently is employed with more than one jobs
Family Income	Participants' self-identified family income level	1= \$10,000 to \$50,000 2= \$50,000 to \$100,1000 3= More than \$100, 000

Mother's Educational Attainment	Participants' report of their parents' educational attainment	1= Less than high school or high school/GED 2= Some college/2-year college degree (Associates) 3= 4-year college degree (BA, BS) 4= Post-graduate degree (Master's, Doctoral, or Professional degrees)
Predicting/Observed Variables		
Acculturative Stress	The immigration stressors experienced by immigrant families, including acculturation and adaptation stressors, language barriers, racial/ethnic discrimination, and cultural conflicts.	Social, Attitudinal, Familial, and Environmental Acculturative Stress Scale (SAFE) Shorten Version with 8 items ( $\alpha = .73$ )  Higher SAFE scores = experience more acculturative stress
Adultification	Multidimensional adultification experiences, includes parent-focused adultification, sibling-focused adultification, and perceived-benefit of adultification.	Parentification Inventory (PI) Shorten Version with 6 items ( $\alpha = .92$ )  Higher PI scores = receive more adultification experience
Family Obligation Attitudes	Participants' attitudes toward family assisting behaviors and obligations within Chinese immigrant families.	Attitudes toward Family Obligation (FOA) Shorten Version with 5 items ( $\alpha = .77$ )  Higher FOA scores = hold stronger attitudes toward family obligations
Dependent/Outcome Variables		
Mental Health		
Depressive Symptomatology	Self-reported depressive symptomatology	Center for Epidemiologic Studies Depression Scale (CES-D) Shorten Version with 13 items ( $\alpha$

		= .81) CES-D scores > 16 = significant depressive symptomatology
Anxiety	State and Trait Anxiety Symptomatology Self-reported present and severity of anxiety symptomatology	State-Trait Anxiety Inventory (STAI) for Adults Full version with 40 items ( $\alpha = .91$ )  Higher STAI scores = greater anxiety
Psychosocial Well-being	Participants' self-reported psychological well-being	Ryff's 54-item Scale of Psychological Well-being (SPWB) Shorten Version with 47 items ( $\alpha = .95$ )  Higher SPWB scores = better psychological well-being

Table 11 *Demographic Characteristics of Chinese and Taiwanese Immigrant Offspring*

Characteristic (N=174)			
Age	<i>M</i>	<i>(SD)</i>	
	23.64	(3.58)	
		<i>n</i>	%
Gender			
Male		118	67.4%
Female		57	32.6%
Nationality			
Chinese/Taiwanese		132	75.4%
Other		41	23.4%
Missing		2	1.1%
Number of Siblings			
None		105	60%
One or more		70	40%
Family Structure			
Married-Couple Families		147	84%
Single-Parent Families or Other		28	16%
Generational Status			
First Generation		81	46.3%
Second or Multiple Generation		94	53.7%
Employment Status			
Currently not employed		13	7.4%
Some or a part-time job		111	63.4%
Full-time or more than one job		51	29.1%
Family Income Level			
\$10,000 - \$50,000		9	5.1%
\$50,000 - \$100,000		152	86.9%
More than \$100,000		14	8%
Mother's Educational Attainment			
Less than high school/ High School/GED		4	2.3%
Some College/2-Year College Degree (Associates)		130	74.3%
4-Year College Degree (BS, BA)		34	19.4%
Post-Graduate Degrees (MS, MA, PhD, Professional Degrees)		7	4%

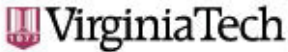
Table 12 *Correlations Statistics of All Study Variables*

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Age	---															
2. Gender	-.28**	---														
3. Nationality	.21*	-.13	---													
4. Generational Status	.27**	-.65**	.09	---												
5. Numbers of Sibling	.02	-.24**	.57**	-.11	---											
6. Family Structure	.15	-.33**	.55**	.28**	.54**	---										
7. Employment Status	.24**	-.16*	.37**	.01	.51**	.50**	---									
8. Family Income Level	.10	-.07	.08	-.12	.16*	-.06	-.03	---								
9. Mother's Ed Level	-.15	.05	.34**	-.26**	.53**	.03	.14	.19*	---							
10. Acculturative Stress	.17*	.28**	.06	-.20**	-.27**	.22**	-.09	-.22**	-.14	---						
11. Family Economic Stress	-.28**	-.54**	-.07	.44**	-.20**	-.09	.33**	-.20**	-.31**	.25**	---					
12. Family Obligation Attitudes	.12	-.51**	-.11	.30**	.27**	.42**	-.16*	.12	.24**	-.51**	.03	---				
13. Adultification	.18*	-.34**	-.47**	.49**	-.64**	-.29**	-.31**	-.02	-.41**	-.05	.45**	.32**	---			
14. Depressive Symptomatology	.12	-.38**	-.18*	.45**	-.41**	.05	.00	-.27**	-.36**	.37**	.72**	.03	.60**	---		
15. Anxiety	-.00	-.14	-.11	.17*	-.22**	.11	-.02	-.34**	-.28**	.47**	.49**	-.03	.26**	.80**	---	
16. Psychological Well-being	-.11	.27**	.04	-.17*	.22**	-.17*	-.13	.23**	.28**	-.41**	-.61**	.09	-.26**	-.81**	-.89*	---

Note. \*\* $p < .001$ . \* $p < .05$ .



**APPENDICES**  
**Appendix A**  
**IRB Approval Letter**



Office of Research Compliance  
Institutional Review Board  
North End Center, Suite 4120, Virginia Tech  
300 Turner Street NW  
Blacksburg, Virginia 24061  
540/231-4606 Fax 540/231-0969  
email [irb@ut.edu](mailto:irb@ut.edu)  
website <http://www.irb.ut.edu>

**MEMORANDUM**

**DATE:** April 23, 2014  
**TO:** Joyce A. Ardit, Jou-Chen Chen  
**FROM:** Virginia Tech Institutional Review Board (FWA00000572, expires April 25, 2018)  
**PROTOCOL TITLE:** The Implication of Childhood Adultification on Youth Mental Health Among Chinese Immigrant Families  
**IRB NUMBER:** 14-430

Effective April 23, 2014, the Virginia Tech Institutional Review Board (IRB) Chair, David M. Moore, approved the New Application request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report within 5 business days to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at:

<http://www.irb.vt.edu/pages/responsibilities.htm>

(Please review responsibilities before the commencement of your research.)

**PROTOCOL INFORMATION:**

Approved As: **Exempt, under 45 CFR 46.110 category(ies) 2,4**  
Protocol Approval Date: **April 23, 2014**  
Protocol Expiration Date: **N/A**  
Continuing Review Due Date\*: **N/A**

\*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

**FEDERALLY FUNDED RESEARCH REQUIREMENTS:**

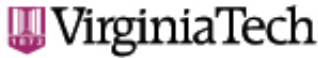
Per federal regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals/work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

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## IRB Approval Letter (Amendment)



### Office of Research Compliance

Institutional Review Board  
North End Center, Suite 4120, Virginia Tech  
300 Turner Street NW  
Blacksburg, Virginia 24061  
540/231-4606 Fax 540/231-0959  
email [irb@vt.edu](mailto:irb@vt.edu)  
website <http://www.irb.vt.edu>

### MEMORANDUM

**DATE:** November 25, 2014  
**TO:** Joyce A Arditti, Jou-Chen Chen  
**FROM:** Virginia Tech Institutional Review Board (FWA00000572, expires April 25, 2018)  
**PROTOCOL TITLE:** The Implication of Childhood Adultification on Youth Mental Health Among Chinese Immigrant Families  
**IRB NUMBER:** 14-430

Effective November 25, 2014, the Virginia Tech Institutional Review Board (IRB) Chair, David M Moore, approved the Amendment request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report within 5 business days to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at:

<http://www.irb.vt.edu/pages/responsibilities.htm>

(Please review responsibilities before the commencement of your research.)

### PROTOCOL INFORMATION:

Approved As: **Exempt, under 45 CFR 46.110 category(ies) 2,4**  
Protocol Approval Date: **April 23, 2014**  
Protocol Expiration Date: **N/A**  
Continuing Review Due Date\*: **N/A**

\*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

### FEDERALLY FUNDED RESEARCH REQUIREMENTS:

Per federal regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals/work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

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## Appendix B

### Recruitment Letter

To Whom It May Concern,

My name is Jou-Chen Chen, and I am a doctoral candidate working on my dissertation under the guidance and supervision of Dr. Joyce Arditti at Virginia Tech. Currently, I am at the data collection stage of my dissertation and you are invited to participate in my study.

This study seeks to investigate mental health status and family relationships amongst college-aged Taiwanese and Chinese immigrant students who is above age of 18. The topic of this quantitative study is “The implication of childhood adultification on youth mental health among Chinese/Taiwanese immigrant families”. I am interested in determining how cultural context, and in particular Chinese/Taiwanese culture, influences the individuals’ experience when they taking on adult-like responsibilities and roles in one’s family during childhood or adolescent years. This is termed “adultification.”

Your participation in this study will absolutely on a voluntary basis. I would greatly appreciate your participation in helping me to complete my dissertation. If you have any questions about the protocol of the study, please contact me via [jouchen7@vt.edu](mailto:jouchen7@vt.edu)

If you agree to be in the study, please visit the survey link to complete the survey. This online survey consists of an informed consent section and survey questions about your family relationships and your feelings about some of the responsibilities you had while you growing up. It should take you about 45 minutes to complete the entire survey including the informed consent section. Most of the questions are multiple choice. After answering the questions, you are done with the study.

Here is the line for the survey:

[https://virginiatech.qualtrics.com/SE/?SID=SV\\_b2Bu8ptCNJ4FhGJ](https://virginiatech.qualtrics.com/SE/?SID=SV_b2Bu8ptCNJ4FhGJ)

In return for your completion of the survey, you will be awarded a \$10 gift card that will be distributed electronically via email. (Your email address will be asked after your completion of the demographic section of the survey).

After completing the online survey, all your identifiable information will be removed or recoded. Your information will be confidential and will be only used for the purpose of the study.

Thank you for your consideration of this matter, and I am looking forward to hearing from you.

Sincerely,  
Jou-Chen Chen

# ATTENTION!

## Participants Needed!

Are you a 1<sup>st</sup> or 2<sup>nd</sup> generation  
Taiwanese or Chinese college student?  
Are you or your parents live in United  
States? Are you above age of 18?  
**I need your help!**

My name is Jou-Chen Chen, and I am a doctoral candidate working on my dissertation under the supervision of Dr. Joyce Arditti at Virginia Tech. This study seeks to investigate mental health status and family relationships amongst college-aged Taiwanese and Chinese immigrant students who is above age of 18. I am interested in determining how cultural context, and in particular Chinese/Taiwanese culture, influences the individuals' experience when they taking on adult-like responsibilities and roles in one's family during childhood or adolescent years.

If you agree to be in the study, you will be directed to an online survey link. Only after receiving your informed consent, I will then provide the access for you to complete the actual questionnaire in the survey. It should take you about 45 minutes to complete the entire survey, including the informed consent section. In return for your completion of the survey, you will be awarded a \$10 gift card that will be distributed electronically via email. This is a research study through Virginia Tech. The result of the study will be used for dissertation and future publications. If you are interested in participating in the study, please contact me via phone (812-272-5614) or email ([jouchen7@vt.edu](mailto:jouchen7@vt.edu)). Thank you!!

## **Consent Form**

Before you agree to participate in this research study, it is important for you to read and understand the following explanation of the purpose of the study and your rights and benefits in participating in the study.

### **Title of the Study:**

The Implications of Childhood Adultification on the Mental Health of Young Adults Among Chinese and Taiwanese Immigrant Families

### **Principle Investigators:**

Dr. Joyce Arditti, Professor in the Department of Human Development at Virginia Tech

### **Co-Principle Investigators:**

Jou-Chen Chen, doctoral student in the Department of Human Development at Virginia Tech, is conducting this research project.

### **Purpose of the Study:**

This study seeks to investigate the mental health and family relationships amongst college-aged Taiwanese and Chinese immigrant students. The researcher is interested in determining how cultural context, and in particular Chinese culture, influences the taking on of adult responsibilities and roles in one's family. This is termed "adultification."

### **Description of the Study:**

This study contains a series of questions that can be answered by simply checking a box on the webpage. All answers are kept strictly confidential. If you voluntarily provide your email address, it will only be used for record-keeping purposes for follow-up questions should you request to be contacted and to receive a copy of the study findings if requested. You will not be asked to provide any other identifying information. The entire survey should take you about 45 minutes to complete. The target population of this study is college-aged first-and second-generation Taiwanese and Chinese immigrant students in the United States. The data will be stripped of all identifying information when presented in the form of academic conferences, papers, and in the doctoral dissertation.

This survey includes questions about your background, your perceptions of family life and obligations, and how you have been feeling lately. In order to participate, you must be at least 18 years old.

Before you give consent to volunteer, it is important that you read the following information and ask as many questions as necessary to be sure that you understand what you are being asked to do.

### **II. Procedures:**

If you agree to participate in this research, you will be directed to a secure online survey. It will take you approximately 45 minutes to complete. Once you complete all questions, your response will be automatically collected. There are no other duties required of the participants. \$10

Amazon gift card will be distributed electronically through your email address once you submit your completed survey.

### **III. Risks or Minimal Risk:**

There are no health risks or discomforts associated with participating in this study. However, you may discontinue participation at any time and it will not affect your relationship with the researcher or the university.

### **IV. Benefits of the Study:**

This investigation is expected to contribute to filling in gaps in the existing literature about family relationships and mental health among immigrant offspring during their emerging adulthood. As a result, the study may inform programs and interventions aimed at Chinese and Taiwanese young adults to promote their mental well-being. It is also expected that findings from this research study will comprise the final reporting of a dissertation research study.

### **V. Extent of Anonymity and Confidentiality:**

The information collected for the present study will be secure and only the investigators will have the access to the data. Any identifiable information will be removed from the survey when presenting the findings. Any personal information and the signed consent form will be stored in a locked drawer separately. All information obtained in connection with this study will remain confidential in any future presentation and publication.

### **VI. Compensation**

You will be compensated for \$10 Amazon gift card for participating in this study.

### **VII. Freedom to Withdraw**

If you agree to participate in this study, you are free to withdraw from the study at any time without penalty. You can change your mind and withdraw your consent at any time. By giving your consent you are not giving up any of your legal rights. Also, you have the right to request the researchers who conduct the study to remove and delete all the information you enter and submit if you decide to withdrawal from the study. You will still receive compensation for your time if you decide to withdraw from the study.

### **VIII. Questions about this Study**

If you have any questions about this research or its conduct, research subjects' rights, or whom to contact in the event of a research-related injury to the subject, you may contact Jou-Chen Chen at [jouchen7@vt.edu](mailto:jouchen7@vt.edu) or (812) 272-5614.

### **IX Subject's Responsibilities**

I voluntarily agree to participate in this study. I have the following responsibility: completing the online survey honestly and completely.

### **X. Permission Statement**

I have read the preceding Consent Form and conditions of this study. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent through completing the online survey questionnaire.

Your signature below indicates that you read all of the above and that you confirm all of the following:

- You have had the opportunity to contact **Jou-Chen Chen** or **Dr. Joyce Arditti** with any questions about the study. You have been informed of the possible benefits and potential risks of the study.
- You understand that you do not have to take part in the study, and your refusal to participate or your decision to withdraw will involved no penalty or loss of the rights or benefits. You understand why the study is being conducted and how it will be performed.
- You understand your rights as a research participant and you voluntarily participate in this study.
- You understand you may print a copy of this form for your records.

\_\_\_\_\_  
Name of Participant

\_\_\_\_\_  
Email of Participant

\_\_\_\_\_  
Date



## Appendix E

### Social, Attitudinal, Familial, and Environmental Acculturative Scale (SAFE)

1	I feel uncomfortable when others make jokes about or put down people of my ethnic background.	1	2	3	4	5
2	I have more barriers to overcome than other people	1	2	3	4	5
3	It bothers me that family members I am close to do not understand my new values	1	2	3	4	5
4	It bothers me that I cannot be with my family.	1	2	3	4	5
5	Close family members and I have conflicting expectations about my future.	1	2	3	4	5
6	It is hard for me to express to my friends how I really feel.	1	2	3	4	5
7	My family does not want me to move away but I would like to.	1	2	3	4	5
8	It bothers me to think that so many people use drugs.	1	2	3	4	5
9	It bothers me that I cannot be with my family.	1	2	3	4	5
10	In looking for a good job, I sometimes feel that my ethnicity is a limitation.	1	2	3	4	5
11	I don't have any close friends.	1	2	3	4	5
12	Many people have stereotypes about my culture or ethnic group and treat me as if they are true.	1	2	3	4	5
13	I don't feel at home.	1	2	3	4	5
14	People think I am unsociable when in fact I have trouble communicating in English.	1	2	3	4	5
15	I often feel that people actively try to stop me from advancing.	1	2	3	4	5
16	It bothers me when people pressure me to assimilate.	1	2	3	4	5
17	I often feel ignored by people who are supposed to assist me.	1	2	3	4	5
18	Because I am different, I do not get enough credit for the work I do.	1	2	3	4	5
19	Loosening the ties with my country is difficult	1	2	3	4	5
20	I often think about my cultural background.	1	2	3	4	5
21	Because of my ethnic background, I feel that others often exclude me from participating in their activities.	1	2	3	4	5
22	It is difficult for me to "show off" my family.	1	2	3	4	5
23	People look down upon me if I practice customs of my culture.	1	2	3	4	5
24	I have trouble understanding others when they speak	1	2	3	4	5

**Total Score**

Note: 1=Not stressful; 2=Very little stress; 3=Moderate levels of stress; 4=Very Stressful; and 5=Extremely Stressful.



## Appendix F

### Social, Attitudinal, Familial, and Environmental Acculturative Scale (SAFE)

#### Adjusted Version

1	I feel uncomfortable when others make jokes about or put down people of my ethnic background.	1	2	3	4	5
3	It bothers me that family members I am close to do not understand my new values	1	2	3	4	5
12	Many people have stereotypes about my culture or ethnic group and treat me as if they are true.	1	2	3	4	5
13	I don't feel at home.	1	2	3	4	5
20	I often think about my cultural background.	1	2	3	4	5
21	Because of my ethnic background, I feel that others often exclude me from participating in their activities.	1	2	3	4	5
22	It is difficult for me to "show off" my family.	1	2	3	4	5
23	People look down upon me if I practice customs of my culture.	1	2	3	4	5

#### ***Total Score***

Note: 1=Not stressful; 2=Very little stress; 3=Moderate levels of stress; 4=Very Stressful; and 5=Extremely Stressful.

## Appendix G

### Family Economic Pressure Indicators (FES)

#### 1 Whether or not you feel that cannot make ends meet

\*Note: 1=Not difficult at all; 2=Slightly difficult; 3= Moderately difficult; 4= Mostly difficult; 5=Extremely difficult.

Do your parents or you feel that your family cannot make ends meet? 1 2 3 4 5

#### 2 Unmet material needs

\*Note: 1=Strongly disagree; 2=Disagree; 3= Agree; 4= Strongly agree

Do your parents or you feel that your family had enough money to pay for the kind of home, food, clothing, household items, car, medical care, and recreational activities the family wanted? 1 2 3 4

#### 3 Financial cutbacks

\*Note: 1=Yes; 0=No

Did your parents or you have to make financial changes and cutbacks in response to financial difficulties in the past year within the following events?

- Borrowing money from friends or relatives 01
- Using savings 01
- Using more credit 01
- Arranging for a second mortgage 01
- Accepting government assistance 01
- Delaying payments on daily bills 01
- Delaying payments on life insurance or mortgage 01
- Selling possessions if any 01
- Postponing major purchases 01
- Postponing vacation 01
- Postponing medical care 01
- Reducing social activity 01
- Reducing charitable contribution, reducing 01
- Energy consumption 01
- Reducing food purchases 01

## Appendix H

### Parentification Inventory (PI)

#### *Parent-Focused Parentification*

- |    |   |   |   |   |   |   |
|----|---|---|---|---|---|---|
| 1  | My parent(s) often shared secrets with me about other family members.                     | 1 | 2 | 3 | 4 | 5 |
| 2  | Most children living in my community contributed to their family's finances.              | 1 | 2 | 3 | 4 | 5 |
| 3  | I helped my parents make important decisions.   | 1 | 2 | 3 | 4 | 5 |
| 4  | Most children my age did not have the same roles and responsibilities that I did.         | 1 | 2 | 3 | 4 | 5 |
| 5  | I worked and contributed to the family finances.  | 1 | 2 | 3 | 4 | 5 |
| 6  | I was the first person family members turned to when there was a family disagreement.     | 1 | 2 | 3 | 4 | 5 |
| 7  | I often helped solve problems between my parents (or adult caregivers in my family).      | 1 | 2 | 3 | 4 | 5 |
| 8  | I was expected to comfort my parents when they were sad or having emotional difficulties. | 1 | 2 | 3 | 4 | 5 |
| 9  | I serve in the role of referee in my family.  | 1 | 2 | 3 | 4 | 5 |
| 10 | I was the person with whom family members shared their secrets.                           | 1 | 2 | 3 | 4 | 5 |

#### *Sibling-Focused Parentification*

- |    |  |   |   |   |   |   |
|----|--|---|---|---|---|---|
| 11 | I was asked to complete the grocery shopping more than any other family member.            | 1 | 2 | 3 | 4 | 5 |
| 12 | I served in the role of translator for family members.                                     | 1 | 2 | 3 | 4 | 5 |
| 13 | I had no time to be happy or sad because I had to care for my family members.              | 1 | 2 | 3 | 4 | 5 |
| 14 | I was responsible for making sure that my siblings went to bed every night.                | 1 | 2 | 3 | 4 | 5 |
| 15 | I had no time for play or school work because of my family responsibilities.               | 1 | 2 | 3 | 4 | 5 |
| 16 | I was responsible for helping my siblings complete their work.                             | 1 | 2 | 3 | 4 | 5 |
| 17 | I was the primary person who disciplined my siblings.                                      | 1 | 2 | 3 | 4 | 5 |
| 18 | I was expected to comfort my siblings when they were sad or having emotional difficulties. | 1 | 2 | 3 | 4 | 5 |
| 19 | I was in charge of doing the laundry for the family most of the days of the week.          | 1 | 2 | 3 | 4 | 5 |

#### *Perceived-Benefit of Parentification*

- |    |   |   |   |   |   |   |
|----|---|---|---|---|---|---|
| 20 | I really enjoyed my role in the family.                     | 1 | 2 | 3 | 4 | 5 |
| 21 | I felt appreciated by my family.                            | 1 | 2 | 3 | 4 | 5 |
| 22 | I felt like our family was a team and worked well together. | 1 | 2 | 3 | 4 | 5 |

#### *Total Score*

\* Note: 1=Never; 2=Rarely; 3=Sometimes; 4=Often; and 5=Always.

**Appendix I**  
**Parentification Inventory (PI)**  
**Adjusted Version**

***Parent-Focused Parentification***

- |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|
| 3 | I helped my parents make important decisions.   | 1 | 2 | 3 | 4 | 5 |
| 5 | I worked and contributed to the family finances.                                      | 1 | 2 | 3 | 4 | 5 |
| 6 | I was the first person family members turned to when there was a family disagreement. | 1 | 2 | 3 | 4 | 5 |
| 7 | I often helped solve problems between my parents (or adult caregivers in my family).  | 1 | 2 | 3 | 4 | 5 |

***Sibling-Focused Parentification***

- |    |  |   |   |   |   |   |
|----|--|---|---|---|---|---|
| 13 | I had no time to be happy or sad because I had to care for my family members.              | 1 | 2 | 3 | 4 | 5 |
| 18 | I was expected to comfort my siblings when they were sad or having emotional difficulties. | 1 | 2 | 3 | 4 | 5 |

***Total Score***

\* Note: 1=Never; 2=Rarely; 3=Sometimes; 4=Often; and 5=Always.

## Appendix J

### Attitudes towards Family Obligation (FOA)

#### *Current Assistance*

1	Spend time with your grandparents, cousins, aunts, and uncles	1	2	3	4	5
2	Spend time at home with your family	1	2	3	4	5
3	Run errands that family needs done	1	2	3	4	5
4	Help your brothers or sisters with their homework	1	2	3	4	5
5	Spend holidays with your family	1	2	3	4	5
6	Help out around the house					
7	Spend time with your family on weekends	1	2	3	4	5
8	Help take care of your brothers and sisters	1	2	3	4	5
9	Eat meals with your family	1	2	3	4	5
10	Help take care of your grandparents	1	2	3	4	5
11	Do things together with your brothers and sisters	1	2	3	4	5

1=Almost never; 2=Rarely; 3=Sometimes; 4=Often; and 5=Almost Always

#### *Total score for this subscale*

1 2 3 4 5

#### *Respect for family*

1	Treat your parents with great respect	1	2	3	4	5
2	Follow your parents' advice about choosing friends	1	2	3	4	5
3	Do well for the sake of your family	1	2	3	4	5
4	Follow your parents' advice about choosing a job or major in college	1	2	3	4	5
5	Treat your grandparents with great respect	1	2	3	4	5
6	Respect your older brothers and sisters	1	2	3	4	5
7	Make sacrifices for your family	1	2	3	4	5

1=Not important at all; 2= Not important; 3= Not sure; 4= Important; 5=Very important

#### *Total score for this subscale*

#### *Future support*

1	Help your parents financially in the future	1	2	3	4	5
2	Live at home with your parents until you are married	1	2	3	4	5
3	Help take care of your brothers and sisters in the future	1	2	3	4	5
4	Spend time with your parents even after you no longer live with them	1	2	3	4	5
5	Live or go to college near your parents	1	2	3	4	5
6	Have your parents live with you when you get older	1	2	3	4	5

1=Not important at all; 2= Not important; 3= Not sure; 4= Important; 5=Very important

#### *Total score for this subscale*

#### **Total score**

## Appendix K

### Attitudes towards Family Obligation (FOA)

#### Adjusted Version

##### *Respect for family*

12	Treat your parents with great respect	1	2	3	4	5
15	Follow your parents' advice about choosing a job or major in college	1	2	3	4	5
18	Make sacrifices for your family	1	2	3	4	5

1=Not important at all; 2= Not important; 3= Not sure; 4= Important; 5=Very important

*Total score for this subscale*

##### *Future support*

19	Help your parents financially in the future	1	2	3	4	5
20	Live at home with your parents until you are married	1	2	3	4	5

1=Not important at all; 2= Not important; 3= Not sure; 4= Important; 5=Very important

*Total score for this subscale*

***Total score***

## Appendix L

### The Center for Epidemiologic Studies Depression Scale (CES-D)

1	I was bothered by things that usually don't bother me.	1	2	3	4
2	I did not feel like eating; my appetite was poor.	1	2	3	4
3	I felt that I could not shake off the blues, even with help from my family or friends	1	2	3	4
4	I felt that I was just as good as other people.	1	2	3	4
5	I had trouble keeping my mind on what I was doing.	1	2	3	4
6	I felt depressed.	1	2	3	4
7	I felt that everything I did was an effort.	1	2	3	4
8	I felt hopeful about the future.	1	2	3	4
9	I thought my life had been a failure.	1	2	3	4
10	I felt fearful.	1	2	3	4
11	My sleep was restless.	1	2	3	4
12	I was happy.	1	2	3	4
13	I talked less than usual.	1	2	3	4
14	I felt lonely.	1	2	3	4
15	People were unfriendly.	1	2	3	4
16	I enjoyed life.	1	2	3	4
17	I had crying spells.	1	2	3	4
18	I felt sad.	1	2	3	4
19	I felt that people disliked me.	1	2	3	4
20	I could not get "going."	1	2	3	4

#### *Total Score*

\*Note:

1= Rarely or none of the time (less than 1 day);

2= Some or a little of the time (1-2 days);

3= Occasionally or a moderate amount of time (3-4 days);

4= Most or all of the time (5-7 days);

Scoring: Zero point will be assigned to answer 1; 1 point will be assigned to answer 2; 2 points will be assigned to answer 3; 3 points will be assigned to answer 4

Question 4, 8, 12, 16, need reverse coding when scoring

## Appendix M

### The Center for Epidemiologic Studies Depression Scale (CES-D)

#### Adjusted Version

1	I was bothered by things that usually don't bother me.	1	2	3	4
3	I felt that I could not shake off the blues, even with help from my family or friends	1	2	3	4
4	I felt that I was just as good as other people.	1	2	3	4
6	I felt depressed.	1	2	3	4
7	I felt that everything I did was an effort.	1	2	3	4
10	I felt fearful.	1	2	3	4
11	My sleep was restless.	1	2	3	4
13	I talked less than usual.	1	2	3	4
15	People were unfriendly.	1	2	3	4
16	I enjoyed life.	1	2	3	4
17	I had crying spells.	1	2	3	4
18	I felt sad.	1	2	3	4
19	I felt that people disliked me.	1	2	3	4

#### *Total Score*

\*Note:

1= Rarely or none of the time (less than 1 day);

2= Some or a little of the time (1-2 days);

3= Occasionally or a moderate amount of time (3-4 days);

4= Most or all of the time (5-7 days);

Scoring: Zero point will be assigned to answer 1; 1 point will be assigned to answer 2; 2 points will be assigned to answer 3; 3 points will be assigned to answer 4

Question 4, 8, 12, 16, need reverse coding when scoring



## Appendix N

### State-Trait Anxiety Inventory (STAI)

#### STAI Form Y-1 (State)

In the following, there are a number of statements that people have used to describe themselves, please read each statement and then circle the appropriate number to the correct statement to indicate *how you feel right now at this moment*. Please do not spend too much time on any one statement but give the answers, which seems to describe how you generally feel. There are no right or wrong answers.

\*Note:

- 1= Not At All;
- 2= Somewhat;
- 3= Moderately So;
- 4= Very Much So;

1	I feel calm.....	1	2	3	4
2	I feel secure.....	1	2	3	4
3	I feel tense.....	1	2	3	4
4	I feel strained.....	1	2	3	4
5	I feel at ease.....	1	2	3	4
6	I feel upset.....	1	2	3	4
7	I am presently worrying over possible misfortunes.....	1	2	3	4
8	I feel satisfied.....	1	2	3	4
9	I feel frightened.....	1	2	3	4
10	I feel comfortable.....	1	2	3	4
11	I feel self-confident.....	1	2	3	4
12	I feel nervous.....	1	2	3	4
13	I am jittery.....	1	2	3	4
14	I feel indecisive.....	1	2	3	4
15	I am relaxed.....	1	2	3	4
16	I feel content.....	1	2	3	4
17	I am worried.....	1	2	3	4
18	I feel confused.....	1	2	3	4
19	I feel steady.....	1	2	3	4
20	I feel pleasant.....	1	2	3	4

## State-Trait Anxiety Inventory (STAI)

### STAI Form Y-2 (Trait)

In the following, there are a number of statements that people have used to describe themselves, please read each statement and then circle the appropriate number to the correct statement to indicate *how you feel right now at this moment*. Please do not spend too much time on any one statement but give the answers, which seems to describe how you generally feel. There are no right or wrong answers.

\*Note:

- 1= Almost Never;
- 2= Sometimes;
- 3= Often;
- 4= Almost Always;

1	I feel pleasant.....	1	2	3	4
2	I feel nervous and restless.....	1	2	3	4
3	I feel satisfied with myself.....	1	2	3	4
4	I wish I could be as happy as others seem to be.....	1	2	3	4
5	I feel like a failure.....	1	2	3	4
6	I feel rested.....	1	2	3	4
7	I am "calm, cool, and collected".....	1	2	3	4
8	I feel that difficulties are piling up so that I cannot overcome them.....	1	2	3	4
9	I worry too much over something that really doesn't matter.....	1	2	3	4
10	I am happy.....	1	2	3	4
11	I have disturbing thoughts.....	1	2	3	4
12	I lack self-confidence.....	1	2	3	4
13	I feel secure.....	1	2	3	4
14	I make decisions easily.....	1	2	3	4
15	I feel inadequate.....	1	2	3	4
16	I am content.....	1	2	3	4
17	Some unimportant thought runs through my mind and bothers me.....	1	2	3	4
18	I take disappointment so keenly that I can't put them out of my mind.....	1	2	3	4
19	I am a steady person.....	1	2	3	4
20	I get in a state of tension or turmoil as I think over my recent concerns and interests.....	1	2	3	4

**Scoring:**

For reversed questions, 1 point will be assigned to answer 4, 2 points will be assigned to answer 3, 3 points will be assigned to answer 2, and 4 points will be assigned to answer 1. For State subscale, question 1, 2, 5, 8, 10, 11, 15, 16, 19, and 20 need reverse coding when scoring. For Trait subscale, question 1, 6, 7, 10, 13, 16, and 19 need reverse coding when scoring.

## Appendix O

### Ryff's Scale of Psychological Well-being (Ryff's SPWB)

The following set of statements deals with how you might feel about yourself and your life. Please remember there are neither right nor wrong answers.

\*Note:

1= Strongly Disagree;

2= Disagree;

3= Slightly Disagree;

4= Slightly Agree;

5= Agree;

6= Strongly Agree;

**Please circle the number that best describes the degree to which you agree or disagree with each statement**

- |    |  |   |   |   |   |   |   |
|----|--|---|---|---|---|---|---|
| 1  | Most people see me as loving and affectionate.   | 1 | 2 | 3 | 4 | 5 | 6 |
| 2  | I am not afraid to voice my opinion, even when they are in opposition to the opinions of most people.      | 1 | 2 | 3 | 4 | 5 | 6 |
| 3  | In general, I feel I am in charge of the situation in which I live.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 4  | I am not interested in activities that will expand my horizons.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 5  | I live life one day at a time and don't really think about the future.                                     | 1 | 2 | 3 | 4 | 5 | 6 |
| 6  | When I look at the story of my life, I am pleased with how things have turned out.                         | 1 | 2 | 3 | 4 | 5 | 6 |
| 7  | Maintaining close relationships has been difficulty and frustrating for me.                                | 1 | 2 | 3 | 4 | 5 | 6 |
| 8  | My decisions are not usually influenced by what everyone else is doing.                                    | 1 | 2 | 3 | 4 | 5 | 6 |
| 9  | The demands of everyday life often get me down.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 10 | I don't want to try new ways of doing things—my life is fine the way it is.                                | 1 | 2 | 3 | 4 | 5 | 6 |
| 11 | I tend to focus on the present, because the future always brings me problems.                              | 1 | 2 | 3 | 4 | 5 | 6 |
| 12 | In general, I feel confident and positive about myself.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 13 | I often feel lonely because I have few close friends with whom to share my concerns.                       | 1 | 2 | 3 | 4 | 5 | 6 |
| 14 | I tend to worry about what other people think of me.   | 1 | 2 | 3 | 4 | 5 | 6 |
| 15 | I do not fit very well with the people and the community around me.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 16 | I think it is important to have new experiences that challenge how you think about yourself and the world. | 1 | 2 | 3 | 4 | 5 | 6 |
| 17 | My daily activities often seem trivial and unimportant to me.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 18 | I feel like many of the people I know have gotten more out of life than I have.                            | 1 | 2 | 3 | 4 | 5 | 6 |
| 19 | I enjoy personal and mutual conversations with family members or friends.                                  | 1 | 2 | 3 | 4 | 5 | 6 |
| 20 | Being happy with myself is more important to me than having others approve of me.                          | 1 | 2 | 3 | 4 | 5 | 6 |

21	I am quite good at managing the many responsibilities of my daily life.	1	2	3	4	5	6
22	When I think about it, I haven't really improved much as a person over the years.	1	2	3	4	5	6
23	I don't have a good sense of what it is I'm trying to accomplish in my life.	1	2	3	4	5	6
24	I like most aspects of my personality.	1	2	3	4	5	6
25	I don't have many people who want to listen when I need to talk.	1	2	3	4	5	6
26	I tend to be influenced by people with strong opinions.	1	2	3	4	5	6
27	I often feel overwhelmed by my responsibilities.	1	2	3	4	5	6
28	I have a sense that I have developed a lot as a person over time.	1	2	3	4	5	6
29	I used to set goals for myself, but that now seems a waste of time.	1	2	3	4	5	6
30	I made some mistakes in the past, but I feel that all in all everything has worked out for the best.	1	2	3	4	5	6
31	It seems to me that most other people have more friends than I do.	1	2	3	4	5	6
32	I have confidence in my opinions, even if they are contrary to the general consensus.	1	2	3	4	5	6
33	I generally do a good job of taking care of my personal finances and affairs.	1	2	3	4	5	6
34	I do not enjoy being in new situations that require me to change my old familiar ways of doing things.	1	2	3	4	5	6
35	I enjoy making plans for the future and working to make them a reality.	1	2	3	4	5	6
36	In many ways, I feel disappointed about my achievements in my life.	1	2	3	4	5	6
37	People would describe me as a giving person, willing to share my time with others.	1	2	3	4	5	6
38	It's difficult for me to voice my own opinions on controversial matters.	1	2	3	4	5	6
39	I am good at juggling my time so that I can fit everything in that needs to be done.	1	2	3	4	5	6
40	For me, life has been a continuous process of learning, changing, and growth.	1	2	3	4	5	6
41	I am an active person in carrying out the plans I set for myself.	1	2	3	4	5	6
42	My attitude about myself is probably not as positive as most people feel about themselves.	1	2	3	4	5	6
43	I have not experienced many warm and trusting relationships with others.	1	2	3	4	5	6
44	I often change my mind about decisions if my friends or family disagree.	1	2	3	4	5	6
45	I have difficulty arranging my life in a way that is satisfying to me.	1	2	3	4	5	6
46	I gave up trying to make big improvements or change in my life a long time ago.	1	2	3	4	5	6
47	Some people wander aimlessly through life, but I am not one of them.	1	2	3	4	5	6
48	The past has its ups and downs, but in general, I wouldn't want to change it.	1	2	3	4	5	6
49	I know that I can trust my friends, and they know they can trust me.	1	2	3	4	5	6
50	I judge myself by what I think is important, not by the values of what others think is important.	1	2	3	4	5	6
51	I have been able to build a home and a lifestyle for myself that is much to my liking.	1	2	3	4	5	6
52	There is truth to the saying that you can't teach an old dog new tricks.	1	2	3	4	5	6
53	I sometimes feel as if I've done all there is to do in life.	1	2	3	4	5	6

- 54 When I compare myself to friends and acquaintances, it makes me feel good about who I am. 1 2 3 4 5 6

**Scoring:**

*Item numbers 4, 5, 7, 9, 10, 11, 13,14,15,17,18, 22, 23, 25, 26, 27, 29, 31, 34, 36, 38, 42, 43, 44, 45, 46, 52, 53 in the above are reverse scored.*

**Below are the items listed under each subscale. Reverse-scored items are labeled “rs.”**

**Autonomy** – the extent to which students view themselves as being independent and able to resist social pressures

1. I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people.
2. My decisions are not usually influenced by what everyone else is doing.
3. I tend to worry about what other people think of me. (rs)
4. Being happy with myself is more important to me than having others approve of me.
5. I tend to be influenced by people with strong opinions. (rs)
6. I have confidence in my opinions, even if they are contrary to the general consensus.
7. It’s difficult for me to voice my own opinions on controversial matters. (rs)
8. I often change my mind about decisions if my friends or family disagree. (rs)
9. I judge myself by what I think is important, not by the values of what others think is important.

**Environmental Mastery** – the extent to which students feel in control of and able to act in the environment

1. In general, I feel I am in charge of the situation in which I live.
2. The demands of everyday life often get me down. (rs)
3. I do not fit very well with the people in the community around me. (rs)
4. I am quite good at managing the many responsibilities of my daily life.
5. I often feel overwhelmed by my responsibilities. (rs)
6. I generally do a good job of taking care of my personal finances and affairs.
7. I am good at juggling my time so that I can fit everything in that needs to be done.
8. I have difficulty arranging my life in a way that is satisfying to me. (rs)
9. I have been able to build a home and a lifestyle for myself that is much to my liking.

**Personal Growth** – the extent to which students have a sense of continued development and self-improvement

1. I am not interested in activities that will expand my horizons. (rs)
2. I don't want to try new ways of doing things—my life is fine the way it is. (rs)
3. I think it is important to have new experiences that challenge how you think about yourself and the world.
4. When I think about it, I haven't really improved much as a person over the years. (rs)
5. I have a sense that I have developed a lot as a person over time.
6. I do not enjoy being in new situations that require me to change my old familiar ways of doing things. (rs)
7. For me, life has been a continuous process of learning, changing, and growth.

8. I gave up trying to make big improvements or changes in my life a long time ago. (rs)
9. There is truth to the saying that you can't teach an old dog new tricks. (rs)

**Positive Relations with Others** – the extent to which students have satisfying, trusting relationships with other people

1. Most people see me as loving and affectionate.
2. Maintaining close relationships has been difficult and frustrating for me. (rs)
3. I often feel lonely because I have few close friends with whom to share my concerns. (rs)
4. I enjoy personal and mutual conversations with family members or friends.
5. I don't have many people who want to listen when I need to talk. (rs)
6. It seems to me that most other people have more friends than I do. (rs)
7. People would describe me as a giving person, willing to share my time with others.
8. I have not experienced many warm and trusting relationships with others. (rs)
9. I know that I can trust my friends, and they know that they can trust me.

**Purpose in Life** – the extent to which students hold beliefs that give life meaning

1. I live one day at a time and don't really think about the future. (rs)
2. I tend to focus on the present, because the future always brings me problems. (rs)
3. My daily activities often seem trivial and unimportant to me. (rs)
4. I don't have a good sense of what it is that I am trying to accomplish in my life. (rs)
5. I used to set goals for myself, but that now seems a waste of time. (rs)
6. I enjoy making plans for the future and working to make them a reality.
7. I am an active person in carrying out the plans I set for myself.
8. Some people wander aimlessly through life, but I am not one of them.
9. I sometimes feel as if I've done all there is to do in life. (rs)

**Self-Acceptance** – the extent to which students have a positive attitude about themselves

1. When I look at the story of my life, I am pleased with how things have turned out.
2. In general, I feel confident and positive about myself.
3. I feel like many of the people I know have gotten more out of life than I have. (rs)
4. I like most aspects of my personality.
5. I made some mistakes in the past, but I feel that all in all everything has worked out for the best.
6. In many ways, I feel disappointed about my achievements in my life. (rs)
7. My attitude about myself is probably not as positive as most people feel about themselves. (rs)
8. The past had its ups and downs, but in general, I wouldn't want to change it.
9. When I compare myself to friends and acquaintances, it makes me feel good about who I am.

**\*Source:** Center of Inquiry in the Liberal Arts at Wabash College • [www.liberalarts.wabash.edu](http://www.liberalarts.wabash.edu)

## Appendix P

### Ryff's Scale of Psychological Well-being (Ryff's SPWB)

#### Adjusted Version

The following set of statements deals with how you might feel about yourself and your life. Please remember there are neither right nor wrong answers.

\*Note:

- 1= Strongly Disagree;
- 2= Disagree;
- 3= Slightly Disagree;
- 4= Slightly Agree;
- 5= Agree;
- 6= Strongly Agree;

**Please circle the number that best describes the degree to which you agree or disagree with each statement**

- |    |  |   |   |   |   |   |   |
|----|--|---|---|---|---|---|---|
| 1  | Most people see me as loving and affectionate.   | 1 | 2 | 3 | 4 | 5 | 6 |
| 2  | I am not afraid to voice my opinion, even when they are in opposition to the opinions of most people.      | 1 | 2 | 3 | 4 | 5 | 6 |
| 3  | In general, I feel I am in charge of the situation in which I live.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 4  | I am not interested in activities that will expand my horizons.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 5  | I live life one day at a time and don't really think about the future.                                     | 1 | 2 | 3 | 4 | 5 | 6 |
| 6  | When I look at the story of my life, I am pleased with how things have turned out.                         | 1 | 2 | 3 | 4 | 5 | 6 |
| 7  | Maintaining close relationships has been difficulty and frustrating for me.                                | 1 | 2 | 3 | 4 | 5 | 6 |
| 8  | My decisions are not usually influenced by what everyone else is doing.                                    | 1 | 2 | 3 | 4 | 5 | 6 |
| 9  | The demands of everyday life often get me down.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 11 | I tend to focus on the present, because the future always brings me problems.                              | 1 | 2 | 3 | 4 | 5 | 6 |
| 12 | In general, I feel confident and positive about myself.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 13 | I often feel lonely because I have few close friends with whom to share my concerns.                       | 1 | 2 | 3 | 4 | 5 | 6 |
| 15 | I do not fit very well with the people and the community around me.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 16 | I think it is important to have new experiences that challenge how you think about yourself and the world. | 1 | 2 | 3 | 4 | 5 | 6 |
| 18 | I feel like many of the people I know have gotten more out of life than I have.                            | 1 | 2 | 3 | 4 | 5 | 6 |
| 19 | I enjoy personal and mutual conversations with family members or friends.                                  | 1 | 2 | 3 | 4 | 5 | 6 |
| 20 | Being happy with myself is more important to me than having others approve of me.                          | 1 | 2 | 3 | 4 | 5 | 6 |
| 21 | I am quite good at managing the many responsibilities of my daily life.                                    | 1 | 2 | 3 | 4 | 5 | 6 |



22	When I think about it, I haven't really improved much as a person over the years.	1	2	3	4	5	6
23	I don't have a good sense of what it is I'm trying to accomplish in my life.	1	2	3	4	5	6
24	I like most aspects of my personality.	1	2	3	4	5	6
25	I don't have many people who want to listen when I need to talk.	1	2	3	4	5	6
26	I tend to be influenced by people with strong opinions.	1	2	3	4	5	6
27	I often feel overwhelmed by my responsibilities.	1	2	3	4	5	6
28	I have a sense that I have developed a lot as a person over time.	1	2	3	4	5	6
29	I used to set goals for myself, but that now seems a waste of time.	1	2	3	4	5	6
30	I made some mistakes in the past, but I feel that all in all everything has worked out for the best.	1	2	3	4	5	6
31	It seems to me that most other people have more friends than I do.	1	2	3	4	5	6
33	I generally do a good job of taking care of my personal finances and affairs.	1	2	3	4	5	6
35	I enjoy making plans for the future and working to make them a reality.	1	2	3	4	5	6
36	In many ways, I feel disappointed about my achievements in my life.	1	2	3	4	5	6
37	People would describe me as a giving person, willing to share my time with others.	1	2	3	4	5	6
39	I am good at juggling my time so that I can fit everything in that needs to be done.	1	2	3	4	5	6
40	For me, life has been a continuous process of learning, changing, and growth.	1	2	3	4	5	6
41	I am an active person in carrying out the plans I set for myself.	1	2	3	4	5	6
42	My attitude about myself is probably not as positive as most people feel about themselves.	1	2	3	4	5	6
43	I have not experienced many warm and trusting relationships with others.	1	2	3	4	5	6
44	I often change my mind about decisions if my friends or family disagree.	1	2	3	4	5	6
45	I have difficulty arranging my life in a way that is satisfying to me.	1	2	3	4	5	6
46	I gave up trying to make big improvements or change in my life a long time ago.	1	2	3	4	5	6
47	Some people wander aimlessly through life, but I am not one of them.	1	2	3	4	5	6
48	The past has its ups and downs, but in general, I wouldn't want to change it.	1	2	3	4	5	6
49	I know that I can trust my friends, and they know they can trust me.	1	2	3	4	5	6
51	I have been able to build a home and a lifestyle for myself that is much to my liking.	1	2	3	4	5	6
52	There is truth to the saying that you can't teach an old dog new tricks.	1	2	3	4	5	6
53	I sometimes feel as if I've done all there is to do in life.	1	2	3	4	5	6
54	When I compare myself to friends and acquaintances, it makes me feel good about who I am.	1	2	3	4	5	6

**Scoring:**

*Item numbers 4, 5, 7, 9, 10, 11, 13,14,15,17,18, 22, 23, 25, 26, 27, 29, 31, 34, 36, 38, 42, 43, 44, 45, 46, 52, 53 in the above are reverse scored.*

**Below are the items listed under each subscale. Reverse-scored items are labeled “rs.”**

**Autonomy** – the extent to which students view themselves as being independent and able to resist social pressures

10. I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people.
11. My decisions are not usually influenced by what everyone else is doing.
12. I tend to worry about what other people think of me. (rs)
13. Being happy with myself is more important to me than having others approve of me.
14. I tend to be influenced by people with strong opinions. (rs)
15. I have confidence in my opinions, even if they are contrary to the general consensus.
16. It’s difficult for me to voice my own opinions on controversial matters. (rs)
17. I often change my mind about decisions if my friends or family disagree. (rs)
18. I judge myself by what I think is important, not by the values of what others think is important.

**Environmental Mastery** – the extent to which students feel in control of and able to act in the environment

10. In general, I feel I am in charge of the situation in which I live.
11. The demands of everyday life often get me down. (rs)
12. I do not fit very well with the people in the community around me. (rs)
13. I am quite good at managing the many responsibilities of my daily life.
14. I often feel overwhelmed by my responsibilities. (rs)
15. I generally do a good job of taking care of my personal finances and affairs.
16. I am good at juggling my time so that I can fit everything in that needs to be done.
17. I have difficulty arranging my life in a way that is satisfying to me. (rs)
18. I have been able to build a home and a lifestyle for myself that is much to my liking.

**Personal Growth** – the extent to which students have a sense of continued development and self-improvement

10. I am not interested in activities that will expand my horizons. (rs)
11. I don't want to try new ways of doing things—my life is fine the way it is. (rs)
12. I think it is important to have new experiences that challenge how you think about yourself and the world.
13. When I think about it, I haven't really improved much as a person over the years. (rs)
14. I have a sense that I have developed a lot as a person over time.
15. I do not enjoy being in new situations that require me to change my old familiar ways of doing things. (rs)
16. For me, life has been a continuous process of learning, changing, and growth.
17. I gave up trying to make big improvements or changes in my life a long time ago. (rs)
18. There is truth to the saying that you can't teach an old dog new tricks. (rs)

**Positive Relations with Others** – the extent to which students have satisfying, trusting relationships with other people

10. Most people see me as loving and affectionate.
11. Maintaining close relationships has been difficult and frustrating for me. (rs)
12. I often feel lonely because I have few close friends with whom to share my concerns. (rs)
13. I enjoy personal and mutual conversations with family members or friends.
14. I don't have many people who want to listen when I need to talk. (rs)
15. It seems to me that most other people have more friends than I do. (rs)
16. People would describe me as a giving person, willing to share my time with others.
17. I have not experienced many warm and trusting relationships with others. (rs)
18. I know that I can trust my friends, and they know that they can trust me.

**Purpose in Life** – the extent to which students hold beliefs that give life meaning

10. I live one day at a time and don't really think about the future. (rs)
11. I tend to focus on the present, because the future always brings me problems. (rs)
12. My daily activities often seem trivial and unimportant to me. (rs)
13. I don't have a good sense of what it is that I am trying to accomplish in my life. (rs)
14. I used to set goals for myself, but that now seems a waste of time. (rs)
15. I enjoy making plans for the future and working to make them a reality.
16. I am an active person in carrying out the plans I set for myself.
17. Some people wander aimlessly through life, but I am not one of them.
18. I sometimes feel as if I've done all there is to do in life. (rs)

**Self-Acceptance** – the extent to which students have a positive attitude about themselves

10. When I look at the story of my life, I am pleased with how things have turned out.
11. In general, I feel confident and positive about myself.
12. I feel like many of the people I know have gotten more out of life than I have. (rs)
13. I like most aspects of my personality.
14. I made some mistakes in the past, but I feel that all in all everything has worked out for the best.
15. In many ways, I feel disappointed about my achievements in my life. (rs)
16. My attitude about myself is probably not as positive as most people feel about themselves. (rs)
17. The past had its ups and downs, but in general, I wouldn't want to change it.
18. When I compare myself to friends and acquaintances, it makes me feel good about who I am.

**\*Source:** Center of Inquiry in the Liberal Arts at Wabash College • [www.liberalarts.wabash.edu](http://www.liberalarts.wabash.edu)

## Appendix Q

## Complete Survey

### **Part I Study Information and Contact Information**

This study seeks to investigate family relationships amongst college-aged Taiwanese and Chinese immigrant students. The topic of this quantitative study is the relationships between childhood adultification, family obligation, and psychosocial distress and well-being within Chinese immigrant families. I am interested in determining how cultural context, and in particular Chinese culture, influences the taking on of adult responsibilities and roles in one's family. This is termed "adultification."

If you wish to leave your contact information for further contact or explanation and the report of the study findings, please leave your email with us. Thank you for participating in the present study.

Email Address: \_\_\_\_\_

### **Part II Background Information**

1. What is your gender?
  - Male
  - Female
2. Please enter your age?
  - I am \_\_\_\_\_ years old.
3. What is your nationality?
  - Chinese
  - Taiwanese
  - Others (please defined): \_\_\_\_\_
4. How many siblings you have?
  - None
  - One
  - Two
  - Three
  - More than three
5. What is your birth order? Please select one:
  - Only child
  - First child
  - Middle child
  - Youngest child
6. How would you describe your family?

- Married-couple families
  - Male-headed single-parent families
  - Female-headed single-parent families
  - Grandparent led families
7. What is your generational status?
- First generation
  - Second generation
  - Multiple generation
8. Are you currently employed?
- Yes, I have a part-time job
  - Yes, I have a full-time job
  - Yes, I have more than one job
  - No, I am currently not employed
9. If you are currently employed, how many hours each week?
- I am currently not employed
  - Less than 10 hours
  - 10 to 20 hours
  - 20 to 30 hours
  - 30 to 40 hours
  - More than 40 hours
10. What is your family income level?
- Less than \$10,000
  - \$10,000 to \$30,000
  - \$30,000 to \$50,000
  - \$50,000 to \$70,000
  - \$70,000 to \$100,000
  - \$100,000 to \$150,000
  - More than \$150,000
11. What is the highest educational level that your father has completed?
- Less than High School
  - High School/GED
  - Some College
  - 2-Year College Degree (Associates)
  - 4-Year College Degree (BA, BS)
  - Master Degree
  - Doctoral Degree
  - Professional Degree (MD, JD)
  - Other: \_\_\_\_\_
12. What is the highest educational level that your mother has completed?

- Less than High School
- Higher School/GED
- Some College
- 2-Year College Degree (Associates)
- 4-Year College Degree (BA, BS)
- Master Degree
- Doctoral Degree
- Professional Degree (MD, JD)
- Other: \_\_\_\_\_

13. For record-keeping purposes (gift card distribution, follow-up questions, and sending copies of study findings if requested), please provide your email address. Thank you.

Email: \_\_\_\_\_

### **Part III Survey**

In this section, I would like to ask you some questions about your thoughts and feelings when you interact with family members at home or with other people at school or outside of the family since your family migrated from the birthplace of you or your parents.

Note: 1=Not stressful; 2=Very little stress; 3=Moderate levels of stress; 4=Very Stressful; and 5=Extremely Stressful.

1	I feel uncomfortable when others make jokes about or put down people of my ethnic background.	1	2	3	4	5
2	I have more barriers to overcome than other people	1	2	3	4	5
3	It bothers me that family members I am close to do not understand my new values	1	2	3	4	5
4	It bothers me that I cannot be with my family.	1	2	3	4	5
5	Close family members and I have conflicting expectations about my future.	1	2	3	4	5
6	It is hard for me to express to my friends how I really feel.	1	2	3	4	5
7	My family does not want me to move away but I would like to.	1	2	3	4	5
8	It bothers me to think that so many people use drugs.	1	2	3	4	5
9	It bothers me that I cannot be with my family.	1	2	3	4	5
10	In looking for a good job, I sometimes feel that my ethnicity is a limitation.	1	2	3	4	5
11	I don't have any close friends.	1	2	3	4	5
12	Many people have stereotypes about my culture or ethnic group and treat me as if they are true.	1	2	3	4	5
13	I don't feel at home.	1	2	3	4	5
14	People think I am unsociable when in fact I have trouble communicating in English.	1	2	3	4	5

15	I often feel that people actively try to stop me from advancing.	1	2	3	4	5
16	It bothers me when people pressure me to assimilate.	1	2	3	4	5
17	I often feel ignored by people who are supposed to assist me.	1	2	3	4	5
18	Because I am different, I do not get enough credit for the work I do.	1	2	3	4	5
19	Loosening the ties with my country is difficult.	1	2	3	4	5
20	I often think about my cultural background.	1	2	3	4	5
21	Because of my ethnic background, I feel that others often exclude me from participating in their activities.	1	2	3	4	5
22	It is difficult for me to "show off" my family.	1	2	3	4	5
23	People look down upon me if I practice customs of my culture.	1	2	3	4	5
24	I have trouble understanding others when they speak.	1	2	3	4	5

Now I would like to ask you some questions about the stress levels of the economic difficulties of your family based on your understanding and perceptions.

## **2 Whether or not you feel that cannot make ends meet**

\*Note: 1=Not difficult at all; 2=Slightly difficult; 3= Moderately difficult; 4= Mostly difficult; 5=Extremely difficult.

**Do your parents or you feel that your family cannot make ends meet?**    1   2   3   4   5

## **4 Unmet material needs**

\*Note: 1=Strongly disagree; 2=Disagree; 3= Agree; 4= Strongly agree

Do your parents or you feel that your family had enough money to pay for the kind of home, food, clothing, household items, car, medical care, and recreational activities the family wanted?                                    1   2   3   4

## **5 Financial cutbacks**

\*Note: 1=Yes; 0=No

Did your parents or you have to make financial changes and cutbacks in response to financial difficulties in the past year within the following events?

• Borrowing money from friends or relatives	0	1
• Using savings	0	1
• Using more credit	0	1
• Arranging for a second mortgage	0	1
• Accepting government assistance	0	1
• Delaying payments on daily bills	0	1
• Delaying payments on life insurance or mortgage	0	1
• Selling possessions if any	0	1
• Postponing major purchases	0	1
• Postponing vacation	0	1
• Postponing medical care	0	1
• Reducing social activity	0	1
• Reducing charitable contribution	0	1

- Reducing energy consumption 0 1
- Reducing food purchases 0 1

In the following, I would like to ask you some questions about the experiences of adult-like responsibility taking or playing parental role during your childhood or adolescent years for the survival of the family. Please answer the following questions based on the experiences and memories you have in the past. Thank you.

\* Note: 1=Never; 2=Rarely; 3=Sometimes; 4=Often; and 5=Always.

1	My parent(s) often shared secrets with me about other family members.	1	2	3	4	5
2	Most children living in my community contributed to their family's finances.	1	2	3	4	5
3	I helped my parents make important decisions.	1	2	3	4	5
4	Most children my age did not have the same roles and responsibilities that I did.	1	2	3	4	5
5	I worked and contributed to the family finances.	1	2	3	4	5
6	I was the first person family members turned to when there was a family disagreement.	1	2	3	4	5
7	I often helped solve problems between my parents (or adult caregivers in my family).	1	2	3	4	5
8	I was expected to comfort my parents when they were sad or having emotional difficulties.	1	2	3	4	5
9	I serve in the role of referee in my family.	1	2	3	4	5
10	I was the person with whom family members shared their secrets.	1	2	3	4	5
11	I was asked to complete the grocery shopping more than any other family member.	1	2	3	4	5
12	I served in the role of translator for family members.	1	2	3	4	5
13	I had no time to be happy or sad because I had to care for my family members.	1	2	3	4	5
14	I was responsible for making sure that my siblings went to bed every night.	1	2	3	4	5
15	I had no time for play or school work because of my family responsibilities.	1	2	3	4	5
16	I was responsible for helping my siblings complete their work.	1	2	3	4	5
17	I was the primary person who disciplined my siblings.	1	2	3	4	5
18	I was expected to comfort my siblings when they were sad or having emotional difficulties.	1	2	3	4	5
19	I was in charge of doing the laundry for the family most of the days of the week.	1	2	3	4	5
20	I really enjoyed my role in the family.	1	2	3	4	5
21	I felt appreciated by my family.	1	2	3	4	5
22	I felt like our family was a team and worked well together.	1	2	3	4	5



In the following, I would like to ask some questions about your attitude toward family assisting behaviors and obligation and your support for the family.

**Part 1**

\*Note: 1=Almost never; 2=Rarely; 3=Sometimes; 4=Often; and 5=Almost Always

1	Spend time with your grandparents, cousins, aunts, and uncles	1	2	3	4	5
2	Spend time at home with your family	1	2	3	4	5
3	Run errands that family needs done	1	2	3	4	5
4	Help your brothers or sisters with their homework	1	2	3	4	5
5	Spend holidays with your family	1	2	3	4	5
6	Help out around the house					
7	Spend time with your family on weekends	1	2	3	4	5
8	Help take care of your brothers and sisters	1	2	3	4	5
9	Eat meals with your family	1	2	3	4	5
10	Help take care of your grandparents	1	2	3	4	5
11	Do things together with your brothers and sisters	1	2	3	4	5

**Part 2**

\*Note: 1=Not important at all; 2= Not important; 3= Not sure; 4= Important; 5=Very important

1	Treat your parents with great respect (12)	1	2	3	4	5
2	Follow your parents' advice about choosing friends	1	2	3	4	5
3	Do well for the sake of your family	1	2	3	4	5
4	Follow your parents' advice about choosing a job or major in college	1	2	3	4	5
5	Treat your grandparents with great respect	1	2	3	4	5
6	Respect your older brothers and sisters	1	2	3	4	5
7	Make sacrifices for your family	1	2	3	4	5

**Part 3**

\*Note: 1=Not important at all; 2= Not important; 3= Not sure; 4= Important; 5=Very important

1	Help your parents financially in the future (18)	1	2	3	4	5
2	Live at home with your parents until you are married	1	2	3	4	5
3	Help take care of your brothers and sisters in the future	1	2	3	4	5
4	Spend time with your parents even after you no longer live with them	1	2	3	4	5
5	Live or go to college near your parents	1	2	3	4	5
6	Have your parents live with you when you get older	1	2	3	4	5

Now I would like to ask you some questions about how you are feeling lately, please following the following instruction to answer the questions. Thank you.

\*Note:

- 1= Rarely or none of the time (less than 1 day);
- 2= Some or a little of the time (1-2 days);
- 3= Occasionally or a moderate amount of time (3-4 days);
- 4= Most or all of the time (5-7 days);

1	I was bothered by things that usually don't bother me.	1	2	3	4
2	I did not feel like eating; my appetite was poor.	1	2	3	4
3	I felt that I could not shake off the blues, even with help from my family or friends	1	2	3	4
4	I felt that I was just as good as other people.	1	2	3	4
5	I had trouble keeping my mind on what I was doing.	1	2	3	4
6	I felt depressed.	1	2	3	4
7	I felt that everything I did was an effort.	1	2	3	4
8	I felt hopeful about the future.	1	2	3	4
9	I thought my life had been a failure.	1	2	3	4
10	I felt fearful.	1	2	3	4
11	My sleep was restless.	1	2	3	4
12	I was happy.	1	2	3	4
13	I talked less than usual.	1	2	3	4
14	I felt lonely.	1	2	3	4
15	People were unfriendly.	1	2	3	4
16	I enjoyed life.	1	2	3	4
17	I had crying spells.	1	2	3	4
18	I felt sad.	1	2	3	4
19	I felt that people disliked me.	1	2	3	4
20	I could not get "going."	1	2	3	4

In the following, there are a number of statements that people have used to describe themselves, please read each statement and then circle the appropriate number to the correct statement to indicate *how you feel right now at this moment*. Please do not spend too much time on any one statement but give the answers, which seems to describe how you generally feel. There are no right or wrong answers.

\*Note:

- 1= Not At All;
- 2= Somewhat;
- 3= Moderately So;
- 4= Very Much So;

1	I feel calm.....	1	2	3	4
2	I feel secure.....	1	2	3	4
3	I feel tense.....	1	2	3	4
4	I feel strained.....	1	2	3	4
5	I feel at ease.....	1	2	3	4
6	I feel upset.....	1	2	3	4
7	I am presently worrying over possible misfortunes.....	1	2	3	4

8	I feel satisfied.....	1	2	3	4
9	I feel frightened.....	1	2	3	4
10	I feel comfortable.....	1	2	3	4
11	I feel self-confident.....	1	2	3	4
12	I feel nervous.....	1	2	3	4
13	I am jittery.....	1	2	3	4
14	I feel indecisive.....	1	2	3	4
15	I am relaxed.....	1	2	3	4
16	I feel content.....	1	2	3	4
17	I am worried.....	1	2	3	4
18	I feel confused.....	1	2	3	4
19	I feel steady.....	1	2	3	4
20	I feel pleasant.....	1	2	3	4

In the following, there are a number of statements that people have used to describe themselves, please read each statement and then circle the appropriate number to the correct statement to indicate *how you feel right now at this moment*. Please do not spend too much time on any one statement but give the answers, which seems to describe how you generally feel. There are no right or wrong answers.

\*Note:

- 1= Almost Never;
- 2= Sometimes;
- 3= Often;
- 4= Almost Always;

1	I feel pleasant.....	1	2	3	4
2	I feel nervous and restless.....	1	2	3	4
3	I feel satisfied with myself.....	1	2	3	4
4	I wish I could be as happy as others seem to be.....	1	2	3	4
5	I feel like a failure.....	1	2	3	4
6	I feel rested.....	1	2	3	4
7	I am "calm, cool, and collected".....	1	2	3	4
8	I feel that difficulties are piling up so that I cannot overcome them.....	1	2	3	4
9	I worry too much over something that really doesn't matter.....	1	2	3	4
10	I am happy.....	1	2	3	4
11	I have disturbing thoughts.....	1	2	3	4
12	I lack self-confidence.....	1	2	3	4
13	I feel secure.....	1	2	3	4
14	I make decisions easily.....	1	2	3	4
15	I feel inadequate.....	1	2	3	4
16	I am content.....	1	2	3	4
17	Some unimportant thought runs through my mind and bothers me.....	1	2	3	4
18	I take disappointment so keenly that I can't put them out of my mind.....	1	2	3	4

- |    |  |   |   |   |   |
|----|--|---|---|---|---|
| 19 | I am a steady person.....  | 1 | 2 | 3 | 4 |
| 20 | I get in a state of tension or turmoil as I think over my recent concerns and interests..... | 1 | 2 | 3 | 4 |

The following set of statements deals with how you might feel about yourself and your life. Please remember there are neither right nor wrong answers.

\*Note:

- 1= Strongly Disagree;
- 2= Disagree;
- 3= Slightly Disagree;
- 4= Slightly Agree;
- 5= Agree;
- 6= Strongly Agree;

**Please circle the number that best describes the degree to which you agree or disagree with each statement**

- |    |  |   |   |   |   |   |   |
|----|--|---|---|---|---|---|---|
| 1  | Most people see me as loving and affectionate.   | 1 | 2 | 3 | 4 | 5 | 6 |
| 2  | I am not afraid to voice my opinion, even when they are in opposition to the opinions of most people.      | 1 | 2 | 3 | 4 | 5 | 6 |
| 3  | In general, I feel I am in charge of the situation in which I live.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 4  | I am not interested in activities that will expand my horizons.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 5  | I live life one day at a time and don't really think about the future.                                     | 1 | 2 | 3 | 4 | 5 | 6 |
| 6  | When I look at the story of my life, I am pleased with how things have turned out.                         | 1 | 2 | 3 | 4 | 5 | 6 |
| 7  | Maintaining close relationships has been difficulty and frustrating for me.                                | 1 | 2 | 3 | 4 | 5 | 6 |
| 8  | My decisions are not usually influenced by what everyone else is doing.                                    | 1 | 2 | 3 | 4 | 5 | 6 |
| 9  | The demands of everyday life often get me down.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 10 | I don't want to try new ways of doing things—my life is fine the way it is.                                | 1 | 2 | 3 | 4 | 5 | 6 |
| 11 | I tend to focus on the present, because the future always brings me problems.                              | 1 | 2 | 3 | 4 | 5 | 6 |
| 12 | In general, I feel confident and positive about myself.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 13 | I often feel lonely because I have few close friends with whom to share my concerns.                       | 1 | 2 | 3 | 4 | 5 | 6 |
| 14 | I tend to worry about what other people think of me.   | 1 | 2 | 3 | 4 | 5 | 6 |
| 15 | I do not fit very well with the people and the community around me.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 16 | I think it is important to have new experiences that challenge how you think about yourself and the world. | 1 | 2 | 3 | 4 | 5 | 6 |
| 17 | My daily activities often seem trivial and unimportant to me.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 18 | I feel like many of the people I know have gotten more out of life than I have.                            | 1 | 2 | 3 | 4 | 5 | 6 |
| 19 | I enjoy personal and mutual conversations with family members or friends.                                  | 1 | 2 | 3 | 4 | 5 | 6 |
| 20 | Being happy with myself is more important to me than having others   | 1 | 2 | 3 | 4 | 5 | 6 |

	approve of me.								
21	I am quite good at managing the many responsibilities of my daily life.	1	2	3	4	5	6		
22	When I think about it, I haven't really improved much as a person over the years.	1	2	3	4	5	6		
23	I don't have a good sense of what it is I'm trying to accomplish in my life.	1	2	3	4	5	6		
24	I like most aspects of my personality.	1	2	3	4	5	6		
25	I don't have many people who want to listen when I need to talk.	1	2	3	4	5	6		
26	I tend to be influenced by people with strong opinions.	1	2	3	4	5	6		
27	I often feel overwhelmed by my responsibilities.	1	2	3	4	5	6		
28	I have a sense that I have developed a lot as a person over time.	1	2	3	4	5	6		
29	I used to set goals for myself, but that now seems a waste of time.	1	2	3	4	5	6		
30	I made some mistakes in the past, but I feel that all in all everything has worked out for the best.	1	2	3	4	5	6		
31	It seems to me that most other people have more friends than I do.	1	2	3	4	5	6		
32	I have confidence in my opinions, even if they are contrary to the general consensus.	1	2	3	4	5	6		
33	I generally do a good job of taking care of my personal finances and affairs.	1	2	3	4	5	6		
34	I do not enjoy being in new situations that require me to change my old familiar ways of doing things.	1	2	3	4	5	6		
35	I enjoy making plans for the future and working to make them a reality.	1	2	3	4	5	6		
36	In many ways, I feel disappointed about my achievements in my life.	1	2	3	4	5	6		
37	People would describe me as a giving person, willing to share my time with others.	1	2	3	4	5	6		
38	It's difficult for me to voice my own opinions on controversial matters.	1	2	3	4	5	6		
39	I am good at juggling my time so that I can fit everything in that needs to be done.	1	2	3	4	5	6		
40	For me, life has been a continuous process of learning, changing, and growth.	1	2	3	4	5	6		
41	I am an active person in carrying out the plans I set for myself.	1	2	3	4	5	6		
42	My attitude about myself is probably not as positive as most people feel about themselves.	1	2	3	4	5	6		
43	I have not experienced many warm and trusting relationships with others.	1	2	3	4	5	6		
44	I often change my mind about decisions if my friends or family disagree.	1	2	3	4	5	6		
45	I have difficulty arranging my life in a way that is satisfying to me.	1	2	3	4	5	6		
46	I gave up trying to make big improvements or change in my life a long time ago.	1	2	3	4	5	6		
47	Some people wander aimlessly through life, but I am not one of them.	1	2	3	4	5	6		
48	The past has its ups and downs, but in general, I wouldn't want to change it.	1	2	3	4	5	6		
49	I know that I can trust my friends, and they know they can trust me.	1	2	3	4	5	6		
50	I judge myself by what I think is important, not by the values of what others think is important.	1	2	3	4	5	6		
51	I have been able to build a home and a lifestyle for myself that is much to my liking.	1	2	3	4	5	6		
52	There is truth to the saying that you can't teach an old dog new tricks.	1	2	3	4	5	6		

- 53 I sometimes feel as if I've done all there is to do in life. 1 2 3 4 5 6
- 54 When I compare myself to friends and acquaintances, it makes me feel good about who I am. 1 2 3 4 5 6

This is the end of the survey. Thank you very much for your time and efforts of completing the survey.

I recognize that your experience of participating in this study may have brought you some emotional discomfort when reflecting on your childhood and family experience. If any emotional discomfort occurs during and after you complete the survey, you may wish to contact us for referral, consult with your counselor, or contact any of the local resources for assistance.

- **Cook Counseling Center –**

Main Office

McComas Hall, RM 240, Virginia Tech, 895 Washington St. SW, Blacksburg, VA 24061. Phone: 540-231-6557

Satellite Office

East Eggleston, RM 107, Virginia Tech, 500 Drill field Drive, Blacksburg, VA 24061. Phone: 540-231-7809

- **Emergency services clinicians –**

Emergency services clinicians are available to meet with you at your location. A friend of family member can call for you if you feel that you are unable to do so yourself. Call 540-961-8400.

New River Valley. <http://www.nrvcs.org/services.htm>

- **Carillion Health Care –**

A 24-hour referral and emergency evaluation service of Carillion Health Care. Call 1-800-284-8898 or 540-731-7385. New River Valley <http://www.carilionclinic.org/psych/connect-evaluations>

- **Montgomery Regional Hospital and Lewis Gale Hospital –**

A mental health admittance and referral service of Montgomery Regional Hospital and Lewis Gale Hospital. Call 540-953-5324. <http://lewisgale.com/service/mental-health>