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The Long-Term Influence of Father Involvement on Emerging Adults' Psychological Well-Being

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THE FLORIDA STATE UNIVERSITY
COLLEGE OF HUMAN SCIENCES

THE LONG-TERM INFLUENCE OF FATHER INVOLVEMENT
ON EMERGING ADULTS' PSYCHOLOGICAL WELL-BEING

By

JINSOOK SEO

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ABSTRACT

This study examined the longitudinal influence of father involvement on emerging adult children's psychological well-being. This was explored in the contexts of mother involvement, interparental marital relationships, and children's attributes. In addition, it was aimed to focus only on positive aspects of children's psychological well-being, because protecting children from negative outcomes is not identical to promoting positive child outcomes. This study was based on Ecological Systems Theory. In particular, the PPCT (process, person, contexts, and time) model guided this study, in that proximal processes were represented by the interactions between a father and a child, person was represented by children's attributes, contexts were represented by mother involvement and interparental marital relationships, and time was represented by a longitudinal analysis of this study.

To examine the research question, a secondary analysis was performed with three waves of data from the National Survey of Families and Households (NSFH). The subsample of this study was 362 households where parents had maintained their marital relationship and responded to the survey since Wave 1, and where the focal children were the biological children of the parents. Variables of interests were constructed, using items measuring each construct: father/mother involvement, interparental marital relationship, children's attributes (race, household income, and gender), and children's psychological well-being (life satisfaction and self-mastery). The analysis was conducted using structural equation modeling with the AMOS 5.0 software.

The results showed that father involvement in young childhood had a long-term influence on emerging adult children's life satisfaction. In addition, father involvement was influenced by mother involvement and interparental marital relationship contemporaneously in both Waves 1 and 2. Furthermore, interparental marital relationship was the strongest determinant of emerging adult children's life satisfaction. Mother involvement did not show any direct influence on children's psychological well-being. Interparental marital relationship and father involvement affect each other across data collection times (Waves 1 and 2). Children's attributes represented by race, household income, and gender did not affect these relationships except for the effect of father involvement at Wave 1 on children's self-mastery. All these results partially supported the hypotheses of this study and Ecological Systems Theory; children's developmental outcomes are the products of father-child relationships in the contexts of mother involvement and interparental marital relationship, and time; children's attributes were not strong determinants of child outcomes.

This study suggested several implications: (1) early father involvement has a long-term influence on children's psychological well-being in emerging adulthood, (2) father involvement is influenced by contextual factors of mother involvement and parents' marital relationships, (3) children's attributes of race, household income, and gender affect father/mother involvement, interparental marital relationship, and children's psychological well-being in various ways. Although this study had limitations, it indicated that children's positive psychological well-being in emerging adulthood could be promoted by several familial factors in young childhood and adolescence as well as children's attributes.

CHAPTER 1

INTRODUCTION

Background of the Problem

Recently, the topic of fathers has attracted appreciable attention in research about family relationships and child development through the examination of the concepts of fatherhood, father's roles, fathering, and father involvement. This is considered a new trend, because research has traditionally focused on mothers and mother-child relationships (Lamb, 2002). Many scholars have made efforts to elaborate on the conceptual framework of fathers and father-child relationships with several theories and empirical studies (Lamb & Tamis-LeMonda, 2004; Kalil, Ziol-Guest, & Coley, 2005). These attempts challenge one of the notions about fathers that "Dads don't make a difference" (Andrews et al., 2004, p. 604). The purpose of this study was to examine fathers' influences on children's development in an ecological context.

The new trend reflects changes of society and family systems (Doherty, Kounesky, & Erickson, 1998; Hawkins, Amato, & King, 2006; McBride & Rane, 1997). In the past, each family member was designated by a prescribed role, such as a father as a breadwinner and a mother as a homemaker (DelCampo, 1994; Larson & Richards, 1994). During the 1930s and the 1940s, the expectations for men in families started changing (Yeung, Duncan, & Hill, 2000), although child development was still considered the mother's responsibility prior to the 1970s (Belsky & Volling, 1987). It was the abrupt social changes such as modernization and industrialization that motivated mothers to extend the prescribed roles of nurturer and homemaker by entering into the workforce (Amato, 1994b; Anderson, Kohler, & Lettietcq, 2002; Harris & Morgan, 1991). Additionally, the feminist perspective that has been adopted internationally since the end of the 19th century has challenged the conservative perspectives about the roles of mothers and fathers (White & Klein, 2002). An increase in divorce rates was another societal change that has raised the expectations of father's roles to go beyond that of the "breadwinner" (Walters & Walters, 1980). Therefore, children in these families have needed more care beyond mothers' nurturing, and fathers have been expected to be involved in parenting both by society and their families (e.g., Furman, 1987; Harris & Morgan, 1991; Hawkins et al., 2006; Knijin, 1995; Thornton, 1989; Yeung et al., 2001).

Doherty et al. (1998) even stated that we are living in “an era of historically high expectations of men’s involvement in the everyday lives of their children” (p. 278).

Such changes are a challenge to the family system, and moreover to fathers and their influences on child development. When it was conventional that fathers performed mostly a breadwinner’s role, the impact of fathering on children was modest. However, when children need various features of the fathers’ roles such as entertainer, nurturer, and discipliner in the current society, the level or amount of father involvement is more critical on child development than before. In addition, the father’s attitudes and activities with his child are different from mother’s (Belsky & Volling, 1987; Whiteside-Mansell, Bradley, & Rakow, 2001). For example, fathers mostly play with their children, whereas mothers interact with children for functional/work-related activities such as completing homework (Lamb, 1995; Hofferth, Stueve, Pleck, Bianchi, & Sayer, 2002; McBride & Mills, 1993; Pleck, 1997). According to Larson and Richards (1994), young adolescents spent more time with fathers during recreational activities than with mothers. On the contrary, children spent more time talking with mothers and doing house chores with them than with their fathers. This difference indicates that lack of father involvement may bring about some negative consequences for child development, or that active father involvement may uniquely encourage child development (Lamb & Tamis-LeMonda, 2004).

Studies have examined the effects of father involvement (e.g., Amato & Gilbreth, 1999; Marsiglio et al., 2000; McBride, Schoppe-Sullivan, & Ho, 2004; Radin, 1986). In fact, there are several central consequences of fathering, because fathers contribute to their children’s lives in various ways: the father biologically plays a role in children’s lives, provides psychological, legal, and financial security, and helps children learn about the outside world, etc. (Knijin, 1995). The studies of fathering or father involvement have improved our understanding of what consequences would be generated by the quality and quantity of father involvement in child development based on these various roles of fathers.

Research shows that father involvement is critical for children’s psychological well-being, which is one of the well-documented constructs among the consequences of father involvement (Biller, 1993; Lewis & Lamb, 2003; Moore, Evans, Brooks-Gunn, & Roth, 2001). Yet, one of the limitations in these studies is their focus on the negative consequences of fathering on psychological well-being (e.g., Carlson, 2006; Rodriguez, 2000; Williams & Kelly, 2005). In other words, the aims of these studies were to find out the factors contributing to negative outcomes in order to develop recommendations about how to prevent those negative outcomes. However, decreasing the chance of destructive consequences is not

the same as increasing positive well-being (Smith, 2006). Ryff et al. (1998) argued that “the absence of illness” is different from “the presence of wellness.” Therefore, it is necessary to examine the relationship between fathering and positive outcomes of children’s psychological well-being.

Additionally, there is still a lack of longitudinal studies (Lamb, Chuang, & Hwang, 2004; Marsiglio et al., 2000). Videon (2005) argued that previous studies on the impact of parent-child relationship on children’s well-being mostly focused on the contemporaneous or concurrent relationships. There are also few studies to encompass emerging adults’ developmental outcomes in order to discover the relationship between childhood experiences and their developmental outcomes (Parke, 2002). Particularly, emerging adulthood is the period when young people ages 18 through 25 test possible directions for their lives and experience changes such as independent living from parents, marriage, and employment (Arnett, 2000). Therefore, the impact of father involvement could be unique and its influence can vary during young childhood, adolescence, or early adulthood. In addition, the impact of father involvement on children’s psychological well-being may not be observed immediately, but may be revealed later when children become young adults. These ongoing changes could be examined through longitudinal designs (Roggman et al., 2002; Sroufe et al., 2005).

Another notable point in the review of current research is that father involvement needs to be studied in the contexts where it is present (Allen & Hawkins, 1999). Several studies about the determinants of father involvement reveal that father involvement is contextually-based, affected by variations in situations, such as parents’ marital relationships and the mother’s expectations of the father (e.g., Gaunt, 2005; Henley & Pasley, 2005; Marsiglio & Cohan, 2000). Although considerable research has described the dyadic relationships of father-child or mother-child, and the effects of these relationships on children’s psychological well-being (Young, Miller, Norton, & Hill, 1995), few studies have embraced contextual factors to understand the effects of the triadic relationship among father-mother-child on child development. In other words, there are pieces of information about father’s and mother’s influences, their marital relationship, and children’s psychological well-being, but there are few studies that combine these factors and examine how they associate with each other. Therefore, it is necessary to understand the contexts where father involvement could be encouraged. This would be process-oriented research (Cummings & Davies, 2002), which is urgently needed in fatherhood research (Marsiglio et al., 2000; Parke, 2002). If the effect of father involvement is affected by mother involvement and by the

marital relationships, father involvement needs to be promoted through interparental relationships.

Yet, the significance of parent-child interaction and family contexts on offspring's well-being does not explain all of the influential conditions for their well-being. Several studies propose that children's own characteristics affect their future well-being and that these should not be ignored (e.g., Lucas & Diener, 2000). Therefore, in order to understand how emerging adults' psychological well-being could be developed in longitudinal and context-based perspectives, children's own attributes need to be included in models of the relationship between developmental determinants and outcomes.

Based on this background, this study examined the effects of father involvement on the psychological well-being of emerging adults over time, in the company of the factors of mother involvement and interparental relationships, and children's own attributes. This study also attempted to clarify the relationships among father involvement, mother involvement, interparental marital relationship, and children's own attributes, and how those factors interact to ultimately influence children's psychological well-being later in life.

Theoretical Perspectives

Ecological Systems Theory was the theoretical framework used in this study. Additionally, a model theorizing children's psychological well-being, named "the promotion of wellness model" was integrated to strengthen the rationale for the hypotheses. This section briefly presents these theoretical frameworks that supported this research.

Ecological Systems Theory

Introduction to Ecological Systems Theory. In order to explore familial influences on children's developmental outcome, this study will be guided by Ecological Systems Theory, because this theory explains human development comprehensively, not limited to child development (Bronfenbrenner, 1988). Due to its breadth and depth, family researchers and educators have accepted and utilized Ecological Systems Theory as a powerful approach to human development (White & Klein, 2002). One of the strengths of this theory is that it encompasses environmental factors as well as humans' own biological factor in developmental outcomes (Bubolz & Sontag, 1993).

Since Bronfenbrenner presented his ecological model in *The ecology of human development* (1979), this theory has evolved (Bronfenbrenner, 2000). He called this the

“bioecological model,” in that individuals’ biopsychological characteristics are as significant as are the environments of developmental contexts. The new model is different in that his original model focused only on environmental factors. Along with the bioecological model, he suggested an operational research design for this paradigm, called the “Process-Person-Context-Time (PPCT) model” (Bronfenbrenner, 1992). Bronfenbrenner believed that “theoretically grounded research” could provide good evidence for policy and practice, and that the PPCT model would strengthen research design (Moen, 1995). The basic assumptions, concepts and the PPCT model are explained below.

Basic assumptions. Ecological Systems Theory was originally an interdisciplinary paradigm; the assumptions contain both its unique notions and common premises found in other theoretical perspectives (Bubolz & Sontag, 1993). This study focused on the following assumptions. With regard to people, human beings are developed by the influences of both biological and cultural factors, and they depend on other human beings (White & Klein, 2002). This means that the development of children is not simply shaped either by nature or nurture, but by interactions between them, and that the members in a family are interdependent on each other.

Second, two assumptions about family are: (a) family is a living system that has interactions with other ecosystems and adaptive functions to maintain the family system in relation to the surrounding environments, and (b) the structure of family and environments and the processes between them are interdependent based on its systemic characteristics (Bubolz and Sontag, 1993). These assumptions imply that each family discovers the way to adjust or change its environmental contexts to maximize individual development in the family.

Basic concepts. Two concepts clearly explain the basic premise of the Ecological Systems Theory. First, *human development* is defined as a process taking place continuously and results from an individual’s capacity to actively interact with his/her environment (Bubolz & Sontag, 1993). It is expected that as an individual grows, he or she is able to collaborate even with more complicated environments (Bronfenbrenner, 1979).

Bronfenbrenner (2001) provided a revised definition of development:

Development is the phenomenon of continuity and change in the biopsychological characteristics of human beings both as individuals and as groups. The phenomenon extends over the life course across successive generations and through historical time, both past and present. (p. 3)

Next, *ecosystem* is the central concept in Ecological Systems Theory (White & Klein, 2002). According to the definition provided by Hawley (1986), an ecosystem is “an arrangement of mutual dependencies in a population by which the whole operates as a unit and thereby maintains a viable environmental relationship” (p. 26). In this study, family is an ecosystem representing the wholeness and interdependency of its parts, which are similar to the concepts of family system theory (Bubolz & Sontag, 1993). Bronfenbrenner (1979) described a family as a “nested” ecosystem in which an individual develops and interacts. He suggested four levels of analysis: the *microsystem* as a basic unit of ecosystem (e.g., a human being), the *mesosystem* as a system of microsystems relating to each other (e.g., father-child), the *exosystem* as a system to embrace mesosystems and affect the development of individuals in mesosystems and microsystems (e.g., family-of-origin), and the *macrosystem* as a cultural system containing belief systems or ideology (e.g., American society).

Propositions for the bioecological paradigm. Bronfenbrenner (1995) provided two general propositions for the bioecological paradigm. These propositions help researchers to understand the dynamics and interactions in a family ecosystem and how these dynamics affect developmental outcomes revealed in the offspring.

Proposition 1 – Human development takes place through processes of progressively more complex reciprocal interactions between an active, evolving biopsychological human organism and the persons, objects, and symbols in its immediate environment. To be effective, the interaction must occur on a fairly regular basis over extended periods of time. Such enduring forms of interaction in the immediate environment are referred to as *proximal processes*. (p. 620)

Proposition 2 – The form, power, content, and direction of the proximal processes effecting development vary systematically as a joint function of the biopsychological characteristics of the developing person; of the environment, both immediate and more remote, in which the processes are taking place; and the nature of the developmental outcomes under considerations. (p. 621)

Bronfenbrenner (2000) believed that propositions 1 and 2 are “theoretically interdependent” and “subject to empirical test.” The Process-Person-Context-Time model is an operational research design for this test. The detailed presentation about the model is below.

Process-Person-Context-Time (PPCT) model. The PPCT model is a research design developed in order to investigate the propositions of the bioecological model (Bronfenbrenner, 1992, 1995, 1999). According to Bronfenbrenner (2000), this design

assumes that developmental outcomes are “the result of the joint, interactive, mutually reinforcing effects of the four principal antecedent components of the model” (p. 130) and analyzes its variations.

In this model, the main element is *proximal process*, which is described in the *Proposition 1*. According to Bronfenbrenner, proximal processes are the “mechanisms of development” (Bronfenbrenner, 1995, p. 626) and even called the “engines” of development. He believed that proximal processes occur when an individual is involved in any kind of interaction with other people, objects or symbols. The examples of proximal processes are caring for infants by feeding and comforting, playing with a child, parent-child interactions, child-child interactions, reading, learning, etc. Several studies show the significance of the proximal processes such as parent-child interactions and its developmental consequences in various environments (Bronfenbrenner, 1995).

He believed that these mechanisms are influenced by both an individual person’s factor and the contexts where the processes occur. This means that this model acknowledges the power of nature and nurture on human development. He emphasized that developmental outcomes are generated from environmental contexts where they interact with the significant others, objects, and symbols, and also from the person’s own characteristics or susceptibility to his/her contexts. This explains why some children who are raised in problematic families do not exhibit dysfunction as adults.

Bronfenbrenner (1995) added to the *person*’s characteristics a force-resource model that described two types of characteristics: biopsychological resources and directional dispositions. Biopsychological resources refer to the ability and assets inherent in the person (e.g., mental ability). Directional dispositions refer to “selective orientations toward the environment” (p. 634) (e.g., exploratory behaviors). He believed that these two types of personal characteristics contribute to produce “synergetic effects” for his/her development in the contexts of environment.

Along with these two elements of the PPCT model, the concept of *context* has functioned in a main role in the Ecological Systems Theory. Among several contextual factors, Bronfenbrenner (2000) emphasized the significant other’s influence as an immediate environment, presented in the following corollary: “the developmental power of proximal processes is substantially enhanced when they occur within the context of a relationship between persons who have developed a strong emotional attachment to each other” (p. 130). One of the significant others in a child’s development is a parent. Additionally, parents’ marital relationship can be another significant influence. In the meantime, Ecological

Systems Theory does not limit its scope to the context of parent-child relations, but extends to social and cultural contexts.

The last element of the PPCT model is *time*. In order to clarify this element, Bronfenbrenner (1995) provided three principles:

Life course principle 1 – The individual's own developmental life course is seen as embedded in and powerfully shaped by conditions and events occurring during the historical period through which the person lives. (p. 641)

Life course principle 2 – A major factor influencing the course and outcome of human development is the timing of biological and social transitions as they relate to the culturally defined age, role expectations, and opportunities occurring throughout the life course. (p. 641)

Life course principle 3 – The lives of all family members are interdependent. Hence, how each family member reacts to a particular historical event or role transition affects the developmental course of the other family members, both within and across generations. (p. 642)

It is unique that these principles consider historical periods in which a person lives and develops. This indicates that the developmental outcome needs to be interpreted in the contexts of both space and time.

Developmental outcomes. In the PPCT model, person is one of the influential elements and a developmental outcome (Bronfenbrenner, 1999). In other words, an individual accounts for his/her own developmental outcomes. Particularly, Bronfenbrenner (1999, 2000) divided developmental outcomes into dysfunction and competence. Dysfunction refers to “the recurrent manifestation of difficulties on the part of the developing person in maintaining control and integration of behavior across a variety of situation” (Bronfenbrenner, 1999, p. 6). Competence refers to “the demonstrated acquisition and further development of abilities – whether intellectual, physical, socioemotional, or combinations of them” (Bronfenbrenner, 1999, p. 6). Based on this theory, either dysfunction or competence could be generated by the combination of processes, person, contexts, and time.

Conclusions. Ecological Systems Theory helps explicate how to examine the related factors of children's psychological well-being, because this is a comprehensive model to explain human development by embracing the various antecedents. This theory, particularly, the PPCT model guided this study to understand how a child develops and acquires positive psychological well-being. Applied to this study, *proximal processes* were father/mother involvement with the focal children and the *person* factors were children's attributes. The

effects of proximal process differ by the environments and suggested that the amount of father involvement is affected by the marital *context*. Additionally, this study used a longitudinal perspective to take into consideration the *time* factor.

Overall, this study was grounded in the notion of positive developmental outcomes. Bronfenbrenner (1995) emphasized the impact of proximal processes on “developmental competence” beyond “developmental dysfunction,” in that the former could be promoted in more secure and positive environments. He mentioned the significance of parenting such that attachment between parent-child supports a child’s competency and parent’s satisfaction and resilience in childrearing, which consequently results in children’s positive psychological well-being (Bronfenbrenner, 2002).

In brief, Ecological Systems Theory was an appropriate theoretical model to guide this study to understand the various determinants of human development.

Models for the Promotion of Psychological Well-Being

In any family, children’s well-being is critically important. In research, psychological well-being is commonly addressed as an outcome construct in child development. Although well-being is a critical element for individual development, researchers have not had consensus about the definition and even the key terms for psychological well-being (Lorion, 2000). Psychological well-being is defined and measured differently in various studies. For instance, Ward (2004) broadly defined well-being as various psychological, emotional, and physical health and wellness. Young, Miller, Norton, and Hill (1995) used life satisfaction as the outcome variable, describing it a feeling of well-being with one’s self and life circumstances. Flouri (2004a) used the term of “subjective well-being” to reflect “a person’s evaluation of his or her life” (p. 335), and operationalized three aspects of life satisfaction, psychological functioning, and psychological distress. In his previous study with Buchanan (Flouri & Buchanan, 2003), they used the term of “psychological well-being,” which was measured as happiness, self-efficacy, and feelings of depression. Keyes, Shmotkin, and Ryff (2002) distinguished subjective well-being from psychological well-being by stating, “Subjective well-being is evaluation of life in terms of satisfaction and balance between positive and negative affect, and psychological well-being entails perception of engagement with existential challenges of life” (p. 1007). Benson (1997) presented 40 developmental assets for youth and suggested that many of the assets were associated with some aspects of psychological well-being, such as sense of control over life, high self-esteem, sense of purpose, and optimism about personal future.

Despite the diverse definitions, the most frequent conceptualization of psychological well-being was “the balance between positive affect and negative affect” and “life satisfaction” (Ryff, 1989, pp. 1069-1070). The balance between positive affect and negative affect was proposed by Bradburn (1969); he believed that happiness originated from this balance. Life satisfaction was proposed by Campbell (1976). He attempted to measure a sense of well-being by three measures (satisfaction with life, general affect, and perceived stress) as a reflection of one’s level of happiness for a human being.

Ryff (1989) argued that these previously mentioned constructs did not comprehensively represent psychological well-being. He proposed six theory-guided dimensions of psychological well-being: self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth; and he tested the relationship between these dimensions and commonly used questionnaires for psychological well-being (e.g., affective well-being, life satisfaction, and depression). Results showed that affective well-being and life satisfaction did not explain all aspects of psychological well-being. In other words, psychological well-being is more complicated construct containing various features of well-being. In another study by Ryff (1995), he provided a test to confirm these six categories with a nationally representative sample of adults, whereby these six categories were empirically supported again. He analyzed these categories by different age groups and found that for young adults the most important scales were personal growth and purpose in life and the least important one was positive relations. This implies that young adults are developing into adults who are responsible for their lives and still unstable in relationships with others compared to older age groups.

Another common way to assess psychological well-being is by measuring negative characteristics such as depression rather than positive aspects of well-being (e.g., Flouri & Buchanan, 2003; Lawton, 1984; Moore et al., 2001). Many earlier studies made efforts to uncover the antecedents of negative outcomes of child development and its consequences (e.g., Videon, 2005). This is based on the notion that the development of pathology needs to be traced to prevent it, which has been dominant and considered relevant in the child development and mental health research (Lorion, 2000). However, negative child outcomes help address psychological well-being only in part. It is necessary to consider the question posed by Moore et al. (2001), “What are good child outcomes?” (p. 59).

In fact, there are several models about negative well-being outcomes and associated family contexts, which are named “the deficit models” (Walters & Walters, 1980). For example, Belsky’s (1984) process model of the determinants of parenting clearly delineate

how parents' personal variables and support system variables affect child development; however, the main focus of his model was on children who were maltreated in families. Another model is that of Cummings and Davies (2002), which included (a) context/stimulus characteristics, (b) stress and coping, (c) child characteristics and background, (d) time (immediate and after effects), and (e) outcomes of adaptation/maladaptation and competence; yet this one was developed to explain only the negative effects of marital conflict on children similar to Belsky (1984).

Cowen (2000) argued that family researchers, educators, and policymakers are interested in the viewpoint of *prevention*, by concentrating on the problems that take place in high-risk families and children as well as the ways to reduce those risks. However, he asserted that risk prevention is not identical to wellness *promotion*, because "undoing" is different from "forming well." Ryff et al. (1998) also distinguished "the absence of illness" and "the presence of wellness" (p. 72).

There is a model that explains how positive well-being could be promoted in the family. It is the promotion of wellness model, Cowen (1999) proposed four input variables that promote or discourage child's well-being: (a) "givens" for a child, (e.g., gender, intelligence, and physical appearance) (b) early stress experienced, (c) attachment relationship formed, and (d) stage-salient competencies acquired. He argued that the first two variables are "uncontrollable," so the last two variables need to be considered more cautiously to help children grow up into healthy adults. Particularly, he believed that parent-child relationships are critical for children's well-being and provided the following four variables to affect parent-child attachment relationship: caregiver variables, family milieu variables, child variables, and the absence of major stressors. Caregiver variables include parents' life history, current adjustment level, and sensitivity to the child. Family milieu variables include parents' marital relationship and family members' harmony. The examples of environmental variables are living conditions and support systems. Child variables are "temperament, attractiveness, brightness, and outgoingness" (p. 15). With these variables, he presented a structural model for child well-being. Interestingly, he attempted to make a connection between his model and Bronfenbrenner's ecological framework as a basis for the study of wellness (Cowen, 2000; Lorion, 2000). This link is continued in this study.

Unlike other models, Cowen's (1999) model provides a visual image of the trajectory of development with regard to psychological well-being, which was one of the aims of this study. According to his model, parent-child relationship and interactions are critical in order to help to promote psychological well-being. Moreover, he proposed that interparental

marital relationship affects parent-child relationship as a family milieu variable. In addition, his model embraces the child's variables in the model for wellness. These aspects of Cowen's (1999) model are related to the framework of ecological systems theory that considers various antecedents for children's developmental outcomes (Cowen, 1999). Therefore, this mini model aided this study to develop an empirical structural model to depict children's psychological well-being along with ecological systems theory.

Statement of Researchable Problem

The purpose of the study is to examine the long-term effects of father involvement on young adult children's psychological well-being, considering the contexts of mother involvement, interparental marital relationship, and children's own attributes. Recently, researchers have been interested in father involvement as it relates to child development; they have examined the effect of father involvement on children in various ways, yet, a comprehensive model has not been provided to understand the relationships between father involvement and children's development in familial contexts. This study aims for understanding the interrelationships among father involvement, mother involvement, their marital relationship, children's attributes, and children's developmental outcomes in one bigger blueprint, by testing a hypothesized model. It is hoped that this study will aid in theorizing about the relationships between family and child well-being, which is required in family research (Seltzer et al., 2005).

In order to better understand the interrelationships among various factors affecting children's psychological well-being, this study takes a longitudinal perspective, which is preferable in parent-child research over cross-sectional strategies (Walters & Walters, 1980). This study assesses the effects of father involvement on children overtime to examine the role of the father as it relates to child development (Biller, 1993; Marsiglio et al., 2000).

Additionally, this study tests the effects of mother involvement and interparental marital relationships on father involvement. Because several studies reveal that father involvement is influenced by mother and the relationships between father and mother, father involvement cannot be understood without considering these (e.g., Belsky & Volling, 1987; Bradford, 2002; McBride & Rane, 1997). These contextual factors help researchers to better understand the triadic relationships of father-mother-child in a family system. For that reason, this study examines the direct and indirect effects of mother, father, and their marital relationships on children's psychological well-being (Lamb & Tamis-LeMonda, 2005), and

the relative importance of fathering and mothering (Stolz, Barber, & Olsen, 2005). Overall, the findings of this study will help explain how father involvement might be encouraged in the triadic relationships in a family system and provide the information that will guide family educators and therapists to develop appropriate programs for fathering (Biller, 1993).

Along with the effects of mother involvement and interparental marital relationship, this study includes the factor of child's own attributes in a hypothesized model of psychological well-being during young adulthood. According to Bronfenbrenner (1995, 1999), a "person" factor should be included when human development is analyzed. By examining the effects of a person's factor in the contexts of parenting and parents' marital relationship, this study would help to understand the interconnections of the determinants for human development and the dynamics of human development that occur in family systems. It is hoped that it would assist family and child science researchers to understand child development in a broad and profound way.

Most of all, this study targeted positive psychological well-being as a developmental outcome, an uncommon trend in previous studies. The focus was on factors affecting children's healthy development in the context of family systems, as opposed to the prevention of the negative outcomes. Therefore, the results of this study may help to uncover conditions to promote child development.

Research Questions and Hypotheses

Based on the need to explore the long-term effects of father involvement on children's psychological well-being within the contextual factors of families, this study primarily focused on the following research question: What are the long-term effects of father involvement on emerging adults' psychological well-being in the contexts of the influences of mother involvement, interparental marital relationships, and children's attributes? This research question was approached in three ways by examining: (a) the causal effects of father involvement during pre-adolescence and adolescence on children's psychological well-being during emerging adulthood; (b) the contextual influences of mother involvement and interparental marital relationships on father involvement, consecutively affecting children's psychological well-being; and (c) the influences of children's attributes (race, SES, & gender) on children's psychological well-being.

The hypothesized model for this inquiry is outlined in Appendix A. This model describes the indirect and direct effects of father involvement on children's psychological

well-being. Mother involvement and interparental marital relationship in early childhood are considered the contexts for father involvement in adolescence. Additionally, this model includes children's demographic characteristics of race, SES, and gender affecting children's psychological well-being in emerging adulthood. Appendices A and B included the description of each variable and scale in detail.

The hypotheses based on this model are as follows:

1. There are positive relationships between the degree of father involvement at Waves 1 and 2 and the level of psychological well-being of focal children at Wave 3 both indirectly and directly.
 - a) The degree of father involvement as measured by the quantity and quality scales reported by fathers at Wave 1 indirectly affect the level of psychological well-being of focal children as measured by life satisfaction and self-mastery scales reported by focal children at Wave 3 positively, by affecting the degree of father involvement as measured by the quantity and quality scales reported by fathers at Wave 2.
 - b) The degree of father involvement as measured by the quantity and quality scales reported by fathers at Wave 2 directly affect the level of psychological well-being of focal children as measured by life satisfaction and self-mastery scales reported by focal children at Wave 3 positively.
2. The degree of mother involvement and the quality of interparental marital relationships at Wave 1 indirectly affect the level of psychological well-being of focal children at Wave 3 positively, by affecting the degree of father involvement at Wave 2.
 - a) The degree of mother involvement as measured by the quantity and quality scales reported by mothers at Wave 1 indirectly affect the level of psychological well-being of focal children as measured by life satisfaction and self-mastery scales reported by focal children at Wave 3 positively, by affecting the degree of father involvement as measured by the quantity and quality scales reported by fathers at Wave 2.
 - b) The quality of interparental marital relationships as measured by the global relationship scale reported by mothers and fathers at Wave 1 indirectly affect the level of psychological well-being of focal children as measured by life satisfaction

and self-mastery scales reported by focal children at Wave 3 positively, by affecting the degree of father involvement as measured by the quantity and quality scales reported by fathers at Wave 2.

3. Race, SES, and gender affect children's psychological well-being as control variables. After controlling for children's demographic attributes, as represented by race, the amount of household income, and gender, the relationships among the degree of father/mother involvement, and the quality of interparental marital relationship at Waves 1 and 2, and the level of psychological well-being of focal children at Wave 3 are maintained.

Definitions/Abbreviations of Key Terms

Children's psychological well-being – Psychological well-being indicates an individual's feeling of satisfaction with and confidence in self and life (Young et al, 1995). In this study, children's psychological well-being were measured by children themselves as outcome variables at Wave 3 with the scales of life satisfaction (LS) and self-mastery (SE).

Father/ mother involvement – Father/ mother involvement refers to father's and mother's engagement, availability, and responsibility in parenting and nurturing (Lamb et al., 1985, 1987), which were be measured by the quantity of direct contacts with children, and by the quality of relationship at Wave 1 and 2. In this study, the term father/ mother involvement were used interchangeably with fathering/ mothering, father's /mother's involvement, and paternal/maternal involvement. In addition to fathers' and mothers' reports, children's reports on the quality of relationship at Wave 2 were added to this construct.

Children's attributes – Children's attributes mean race and socioeconomic status that children were born with and have lived with in each family. In this study, race was divided by two groups (white and non-white) and socioeconomic status was indicated by household total income.

Interparental marital relationships – Interparental marital relationships indicate the quality of relationship between fathers and mothers of focal children in this study. This was measured by global evaluation of marital relationship (Wave 1), and marital satisfaction (Wave 2). Both fathers' and mothers' reports were used for this construct. The following terms were used interchangeably: parents' marital relationship, parental marital relationship, parents' marital quality, and interparental relationship.

The National Survey of Families and Households – The NSFH is a nationally representative and longitudinal survey that provides a plentiful of data about family life, family history, relationships among members, members' physical and psychological well-being, etc. (Sweet, Bumpass, & Call, 1992; Sweet, & Bumpass, 1996, 2002). This study used all of three wave data sets in order to examine the long-term effects of father involvement on young adult children's psychological well-being.

Emerging adult children – Emerging adult children refers to the children who aged 19 through 26 at Wave 3. This is a period of a developmental phase when they “often explore a variety of possible life directions in love, work, and worldviews” (Arnett, 2000, p.469). This is considered different from pre-adolescence, adolescence, and young adulthood (Arnett, 2006; Tanner, 2006).

Primary respondents – Principal researchers for the NSFH selected randomly either male or female main householders as primary respondents at Wave 1. These primary respondents have kept their status as primary reporters in Wave 1 through Wave 3. In this study, primary respondents comprised of approximately half of fathers and half of mothers.

Secondary respondents – Secondary respondents are the spouses or partners of the primary respondents who were randomly selected at Wave 1. They also have maintained their status as secondary reports Wave 1 through Wave 3. In this study, secondary respondents were all spouses who were in the marital relationship with the primary respondents. There are also approximately half of fathers and half of mothers among secondary respondents.

Focal children – Focal children were selected by the primary respondents at Wave 1. Only one child was chosen in each household and has been maintained their status Wave 1 through Wave 3. In this study, focal children age 5 through 12 at Wave 1, age 10 through 17 at Wave 2, and age 19 through 26 at Wave 3.

Household – In this study, a household refers to a family that consists of biological father and mother and their selected focal child. This study used the data from the households that have maintained parents' marital relationship with their biological focal children Wave 1 through Wave 3.

Wave 1, Wave 2, and Wave 3 – Wave refers to a round of data collection in a longitudinal panel study. The NSFH has total three-wave data collection: Wave 1 was collected during 1987 and 1988, Wave 2 was collected during 1992 and 1994, and Wave 3 was collected during 2002 and 2003. This study utilized the data from all of the waves.

Long-term effects – In this study, the influence of father involvement on focal children's psychological well-being was tested in a longitudinal perspective; it was examined

by the contributions of father involvement in pre-adolescence (Wave 1) and in adolescence (Wave 2), as they pertained to the children's psychological well-being in emerging adulthood (Wave 3).

Contexts – In this study, contexts refers to the environment or situations in that a person develops, including relationship among family members (Bronfenbrenner, 2000).

Observed and latent variables – Observed variables are the variables that are measured directly as the indicators of latent variables; Latent variables are the variables that are not directly measured, but indirectly approximated by measuring observed variables (Hoyle, 1995). In this study, the latent variables were father involvement, mother involvement, interparental marital relationship, children's attributes (only at Wave 1), and children's psychological well-being (only at Wave 3). There were several observed variables for each latent variable.

Measurement model – This is a confirmatory factor analysis model that comprised of the latent variables and the observed variables to measure each latent variable (Mulaik & James, 1995). By testing a measurement model, it is determined how well each observed variable serves as an appropriate indicator for latent variables in this study.

Structural model – Structural model refers to a hypothesized model including the relationships among variables of interest (Tate, 1995).

Assumptions

1. The primary and secondary respondents and their focal children responded honestly and properly to the interviews and self-reported questionnaires in the National Survey of Families and Households at Wave 1 through Wave 3.
2. The interview questions and self-reported questionnaires in the NSFH were developed and provided reliably and trustfully.
3. The interviews were conducted appropriately by the trained interviewers who followed the prescribed procedures developed by the Center for Demography and Ecology at the University of Wisconsin-Madison
4. The answers and reports from the respondents were coded and entered accurately by the Center for Demography and Ecology at the University of Wisconsin-Madison.
5. The research team of the NSFH has made attempts to maintain the same households Wave 1 through Wave 3 in order to reduce the attrition rate.

Delimitations

- This study was limited to the households that participated in the National Survey of Families and Households.
- This study was limited to the households that had direct reports of focal children who were available at Wave 2 and 3 interviews.
- This study was limited to the data collected from the focal children ages 5 through 26 and their parents.
- This study was limited in the measurements used to measure the variables of interest.
- This study was limited in the data analytic approach of structural equation modeling that simply allows to test whether a hypothesized model fits to the data, as opposed to test whether the model is true in reality.

CHAPTER 2

REVIEW OF LITERATURE

Introduction

There are considerable studies and models that have introduced various family relational factors affecting individual development (Ryff & Seltzer, 1995). Some of the models address father involvement among family relational factors and comprehensively delineate it as a main antecedent for child outcome (e.g., Doherty et al., 1998; Lamb, Pleck, Charnov, & Levine, 1987; Palkovitz, 1997); yet, this study relied on the Cowen's (1999) model, because the focus of his model was the development of children's well-being. According to his model, two main constructs promote children's well-being: parent-child attachment relationship and the child's level of competencies at developmental stages. He proposed that these two constructs are shaped by four input variables: caregiver variables (e.g., parents' wellness), family milieu variables (e.g., spousal relationship), child variables (e.g., given temperament), and the absence of major stressors in family.

Among these variables, this study focused on parent-child relationships, family milieu, and child variables to understand what promotes children's well-being. Father involvement was used to reflect parent-child relationships. Mother involvement and interparental marital relationships reflected family milieu variables, and children's attributes reflected child variables. The review of literature review was organized by these variables: (a) the conceptualization of father involvement and the effects of father involvement on child development, (b) the contextual effect of mother involvement and parents' marital relationships on father involvement, (c) the influence of mother involvement and parents' marital relationships on children's psychological well-being, and (d) the impact of child's attributes such as gender, race, and SES in child development.

Process of Father Involvement and Children's Psychological Well-Being

A great number of the studies have continuously discovered the significance of parent-child relationships on child development as the Ecological Systems Theory emphasized it. For example, Leung and Leung (1992) showed that the relationship with parents was the best predictor of life satisfaction of junior high school students. Roberts and

Bengtson (1993, 1996) also found that parent-child relationships influence children's well-being from adolescence to adulthood. According to the study of the NICHD Early Child Care Research Network (2004), when fathers were sensitive and supportive of their children's autonomy and mothers supported self-directed child behavior and had emotionally intimate relationships with children, teachers gave the children higher ratings on competency, cooperative social skills, closeness, etc. Van Wel, ter Bogt, and Raaijmakers (2002) stated, "Parents proved to be of lasting importance for the well-being of their growing children" (p. 333).

One of the promising constructs to improve the understanding of parent-child relationships is father involvement; in fact, a father's role was underestimated but has been recently reexamined by families, researchers, and the society (Amato, 1998; Doherty et al., 1998; Yeung et al., 2000). Father involvement is as important as mother involvement is for a child's well-being (e.g., Amato, 1994; McBride, Schoppe-Sullivan, & Ho, 2004), because a mother is simply one of the factors impacting a child's well-being (Larson & Richards, 1994). Moreover, because mothers and fathers are inclined to have different patterns of interactions with their children, it is necessary to address fathers' contributions as well as mothers' to their children (Lewis & Lamb, 2003).

Father Involvement

The concept of father involvement has attracted considerable attention in family-related research during the last 20 years (Lamb, 2002), but still there is no generally accepted definition for it (Palkovitz, 1997). This may originate from the fact that fathering is multidimensional (Flouri & Buchanan, 2003; Lamb & Tamis-LeMonda, 2004), and that the societal changes such as women's upgraded status and increased divorce has challenged and confused the concepts of fathers, fathers' roles, and fatherhood (Knijin, 1995; McBride & Darragh, 1995). Although Christiansen and Palkovitz (2001) argued that the role of "provider" is still important in terms of paternal involvement, fathers have also been requested to perform more than that of a financial provider. Doherty et al. (1998) even posed a question, "What role should fathers play in the everyday lives of their children, beyond the traditional breadwinner role?"

The ambiguity of the conceptualization of father involvement has been revealed in the measurement in previous studies; the construct of father involvement has different definitions and approaches to assess it, which have generated confusion in the literature (Andrews et al., 2004; Parke, 2000). For example, in the study of Salem, Zimmerman, and Notaro (1998), the

relation with father was considered as father involvement measured by (1) time spent with children and (2) significance of father in children's lives. Bulanda (2004) assessed father involvement in terms of father's breadth of interaction with their children and proportional hours spent with the children.

The several ways of assessing father involvement are similarly noticed in the studies about both parents' involvement. Aldous and Bjarnason (1998) operationalized parental involvement was the amount of hours each parent spent in activities with the focal child. In addition, Harris, Furstenberg, and Marmer (1998) divided parental involvement into emotional and behavioral dimensions. The emotional dimension was measured by the questions: (1) how close do you feel to your (father/mother), (2) how much do you want to be like the kind of person (he/she) is when you're an adult, and (3) how much does your (father/mother) give you affection. The behavioral dimension was measured by (1) doing things together, (2) being pleased by the child's performance, and (3) talking about something wrong done by the child.

One of the most frequently used variables for father involvement is the amount of time (or time investment) fathers spend with their children and the activities in which they engage (Lamb, 2000; Mezulis, Hyde, & Clark, 2005). In fact, the term, "involvement" has been used particularly for fathers, in that fathers have been studied mostly by the quantity of fathering or father involvement (Woodworth, Belsky, & Crnic, 1996). For instance, Bradford (2002) used three indicators for father involvement: the frequency of time spending with children (1) at home working on a project or playing together, (2) having private talks, and (3) helping with reading or homework. Yeung et al. (2001) also used the time a child spent with his/her father as a measurement of father involvement. However, sometimes another name for the variable of the number of hours spent with children was "parental care" (Aldous & Mulligan, 2002). Bulanda (2004) measured father involvement by two categories, in that the one was father's proportional hours spent with children and the other was the breadth of interactions between fathers and the children. However, there is an argument that this quantitative aspect of father involvement does not always indicate the quality of father involvement (Marsiglio, Day, & Lamb, 2000), because there is nonobservable father involvement, such as "responsibility" (Lamb et al., 1987). Amato (1998) also suggested that the nature of interaction between fathers and children is more important than the amount of time that fathers spent with their children.

In order to clarify the concept of father involvement, Lamb and his colleagues (1985, 1987) provided the typology of father involvement, which has been frequently used in

research about father involvement (Palkovitz, 1997). They presented three categories of father involvement: engagement,¹ availability, and responsibility. These are defined as follows:

Engagement refers to the father's direct contact with his child through caretaking and shared activities. *Availability* is a related concept concerning the father's potential availability for interaction, by virtue of being present or accessible to the child whether or not direct interaction is occurring. *Responsibility* refers to the role the father takes in ascertaining that the child is taken care of and arranging for resources to be available for the child. (p. 125)

Even though this typology has been used as a standard in fatherhood research, it has been challenged whether this typology comprehensively reflects all of the aspects of father involvement. Palkovitz (1997) addressed this issue and argued that father involvement was observed mainly in the form of engagement, and that father involvement needed to be reconceptualized. What he suggested was three domains of involvement: cognitive, affective and behavioral involvement. He stated, "[p]arents *experience* involvement with their children in these three domains" (p. 208). In addition, he provided a model of father involvement including moderating factors, several continua, and ways to be involved as well as the three domains. His model has been applied to the studies about father involvement (e.g., Marsiglio & Cohan, 2000; Toth Jr. & Xu, 1999). Moreover, Hawkins et al. (2002) developed The Inventory of Father Involvement based on the typology of Palkovitz (1997). An exploratory factor analysis produced nine factors: discipline and responsibility, school encouragement, mother support, providing, time and talking together, praise and affection, developing talents, reading/homework support, and attentiveness. Although his model is comprehensive, it is difficult to use the model for the study of father involvement, because there are few ways to measure all of the variables that this model identifies.

Besides these typologies, Marsiglio, Day, and Lamb (2000) emphasized "men's positive, wide-ranging, and active participation in their children's lives" (p. 276) in order to explain father involvement. They presented four features of paternal influence, which helps understanding direct and indirect effects of fathering on child development: nurturance and provision of care, moral and ethical guidance, emotional, practical, and psychosocial support of female partners, and economic provisioning.

¹ Originally, the word of "interaction" was used for "engagement" in Lamb et al. (1987). Now "engagement" is a commonly accepted term (e.g., Lamb & Tamis-LeMonda, 2004).

These various definitions and typologies reflect that the concept of father involvement is being reconceptualized fit in the changed society and family cultures. Yet, this study used the definition of father involvement from Lamb et al. (1985, 1987), because the items used in this study reflected most of the aspects of engagement, availability, and responsibility.

The Impact of Father Involvement on Children's Psychological Well-Being

As the Ecological Systems Theory suggested the role of interactions (processes) between a child and a parent for human development, a substantial amount of studies provide evidence that father involvement has positive impact on child development. According to Lamb and Tamis-LeMonda (2004), there are four categories of these studies: (1) correlational studies, (2) studies of father absence and divorce, (3) research on involved father, and (4) direct and indirect effects of fathering. In particular, studies about father involvement and child development and the impact of fathering on child outcome suggest that father involvement benefits children. Examples of benefits include general aspects of adolescents' psychological well-being (Harris et al., 1998), behavioral adjustment at school (Williams and Kelly, 2005), academic achievement (Cooksey & Fondell, 1996), self-concept and esteem (Culp et al., 2000), and emotional regulation (Downer & Mendez, 2005; Gottman, 1998).

In the beginning, the research on the impact of father involvement was limited to discovering gender differences in the effects of father involvement. According to Lamb (1995), one of the earliest studies on the impact of father involvement on child development was sex-role development, particularly on sons. Subsequent research has revealed that the quality of the father-child relationship, such as warmth, closeness and involvement, is more important than father's masculinity and their professional success on child development (Mussen & Rutherford, 1963; Radin, 1981); in other words, if the son does not like or admire his father, he is unlikely to resemble him (Lamb & Tamis-LeMonda, 2004). Radin (1986) also argued about the relationships between father involvement and the gender of offspring: (a) sex-role development was influenced primarily by the father's behavior; (b) the bond between fathers and sons was stronger in intellectual growth than between fathers and daughters; and (c) father involvement affected social development in males and success in females.

Recently, a number of studies examined various influences of father involvement on child outcome; one obvious outcome is the unique effect of father involvement on children's well-being, which is independent from the effect of mother's nurturing. For instance, Easterbrooks and Goldberg (1984) provided evidence of the unique contribution of father

involvement on child development by observing both toddlers and parents with strangers and examining parents' self-reports about their parenting. They found that the amount of time that fathers spent with their toddlers uniquely influenced the level of attachment and the quality of problem-solving behaviors of the toddlers. Amato (1994) revealed that closeness to fathers significantly and uniquely affected offspring happiness, life satisfaction, and psychological distress. Amato and Rivera (1999) continuously found that positive paternal involvement is significantly associated with fewer behavioral problems of children, and that the quality of father-child relationship was positively related to children's academic achievement and negatively to their externalizing and internalizing problems in father-absent families (Amato & Gilbreth, 1999). Additionally, Young et al. (1995) used the data from the National Survey of Children to examine the impact of maternal and paternal supportive behaviors on adolescent children's life satisfaction. They provided the results of the analysis of structural equation modeling for mother-daughter, mother-son, father-daughter, and father-son relationship. Among parental supportive behaviors, intrinsic support (e.g., appreciation, love, trust, pleased, and encourage) most strongly predicted life satisfaction regardless of mother's or father's extrinsic behaviors.

Some researchers argued that father involvement uniquely or more contributes to child development than does mother involvement. Flouri and Buchanan (2002, 2003a) found that father involvement influenced children's happiness and adjustment more than mother involvement did, and that there was no difference by gender of the children. Lewis and Lamb (2003) also found that father involvement appeared to predict adult children's adjustment better than mother involvement. McBride, Schoppe-Sullivan, and Ho (2005) showed the significance of father involvement by examining the impact of the school-level and family-level resources on child achievement mediated by father involvement, but it was discovered that the influence of father involvement was greater than that of mother involvement. Mezulis, Hyde, and Clark (2005) also showed the crucial influence of father involvement in child development, as father involvement moderated the effect of mother's depression during a child's infancy on children's internalized behavioral problems.

Besides the concurrent effect of father involvement on child development, there are studies that provide evidence of long-term effects. Williams and Radin (1999) presented a 20-year follow-up study that showed father's early involvement with children benefited young adult children, particularly in better locus of control. Aldous and Mulligan (2002) used two-waves of data from the NSFH and explored the relationship between father's child care and the children's behavioral problems. Results showed that the more involved fathers were with

the preschoolers, who are even categorized ‘harder to raise’, the less problems were reported at schools. Flouri and Buchanan (2002) presented the long-term effect in a different way. They showed that paternal involvement in childhood in terms of the amount of activities they engaged predicted the relationship quality between a father and child in adolescence.

In particular, several studies emphasize children’s psychological well-being as an effect of father involvement (Lewis & Lamb, 2003). Flouri and Buchanan (2003b) examined the impact of father involvement on children’s psychological adjustment, in that father involvement was measured when children were at age 7 and age 16, and children’s later emotional and behavioral adjustment at age 16 and age 33. Results showed that early father involvement affected children’s later mental health. This relationship was stronger in non-intact families than intact families; in other words, the effect of paternal involvement was more influenced by family structure than mother involvement was.

Videon (2005) also used two wave-data from the National Longitudinal Study of Adolescent Health. They assumed that fathers’ involvement would be more important for adolescents than younger children, because adolescents need more “instrumental care,” such as advice for their school and career decision, which consecutively affect their adult lives. They found that father-adolescent relationships had a unique contribution to adolescent’s psychological well-being. That is, the positive change in father-adolescent relationships affected positive change in adolescent’s psychological well-being, which was not found in mother-adolescent relationship. It proves again that the quality of life during adulthood would be associated with the quality of caring performed by fathers during childhood (Snarey & Maier, 1993).

In brief, these studies provide evidence that there is a solid relationship between father involvement and children’s outcome including psychological well-being. In other words, father involvement is a potential antecedent in promoting child development.

Contextual Effects of

Mother Involvement and interparental Marital Relationship

Ecological Systems Theory suggests that contextual factors as well as processes between individuals in families are necessary for human development. Continuous research on father involvement has provided a number of studies about the contextual factors or determinants of father involvement. Several empirical studies show that various factors affect father involvement, and mediate or moderate the relationship between father involvement and

children's well-being. These factors could be either protectors or barriers for father involvement (Allen & Hawkins, 1999). Some of these factors are father's personality and his capability as a financial provider, the number of children, mother's employment, marital status, or children's perception of parenting (e.g., Christiansen & Palkovitz, 2001, Grossman, Pollack, & Golding, 1988; Lamb & Tamis-LeMonda, 2004; Veneziano and Rohner, 1998; Woodworth, Belsky, & Crnic, 1996).

Some researchers proposed models to explain the determinants of father involvement; Lamb et al. (1987) provided a four-factor model to understand what influences father involvement such as motivation, skills and self-confidence, social supports and stresses, and institutional factors. Recently, Lamb and Tamis-LeMonda (2004) extended this model by including cultural ecology factor. They proposed that father involvement is a product of the interplay among these determinants. Similarly, Parke (1996) introduced four determinants of father involvement in a systems view: individual, family, extra-family, and culture.

A common finding from these studies is that father involvement depends more on contexts than does mother involvement does (Doherty et al., 1998). Most of all, the determinants related to family context have been emphasized. Lamb and Tamis-LeMonda (2004) stated, "Fathers must be viewed in the broader familial context" (p. 10). In the study by Esterbrooks and Goldberg (1984), the interdependencies of the relationships among father-mother-child were examined, in that the level of father involvement varied by the level of mother-child attachment in the observation. Salem, Zimmerman, and Notaro (1998) also found that the effect of father involvement on child psychological well-being was mediated by the levels of family conflict, parental support, and parental monitoring. In the study by McBride et al. (2004) using Lamb et al.'s (1987) four-factor model, interparental disagreements in the category of social supports and stresses significantly predicted several aspects of father involvement.

In particular, Parke (1996) described the family determinants as dyadic and triadic relationships: mother-child relationship, father-child relationship, husband-wife relationship, and father-mother-child relationship. In a study by White (1999) examining the triadic relationship of father, mother, and child, she found that father/mother's relationship with the child was associated with marital relationship between parents and the partner's relationship with the child. In other words, father-child relationship could be influenced by his marital relationship and the mother-child relationship.

Mother's Influence on Father Involvement

Among the determinants, the mother's influence is substantial to father involvement (Brandth & Kvande, 2005). Fathers cannot be understood separated from mothers, mothering, mother's beliefs, and social expectations (Doherty et al., 1998). Mothers are still considered to be a primary figure in child development, so it is likely that fathers depend on mothers (Harris & Ryan, 2004), and that mother influenced father involvement (Brandth & Kvande, 2005). Gjerde (1986) showed the mother's impact on father-child relationships by examining father-mother-child interactions either in a triadic or dyadic setting. It revealed that a mother's presence in the setting negatively affected the quality of father-son interactions. At the same time, Belsky and Volling (1987) observed mother-father-infant interactions and found that mothers' behaviors affected fathers' behavior for infants in both long-term and short-term ways. Moreover, the mother-participants in focus groups expressed that they were hesitant to "let go of some of their responsibilities" to their partners (McBride & Darragh, 1995).

In particular, researchers have discovered that a mother's cognitive viewpoint strongly influenced the level of father involvement. McBride and Rane (1997) argued the significance of mothers' perceptions affecting father involvement. They found that a mother's perception of her husband's role seemed to affect the level of father involvement as a mediator. This was also discovered in the study of De Luccie (1996): two viewpoints about father involvement such as how important mothers consider father involvement and how satisfied they were with it predicted the frequency of father involvement measured by mothers. Hoffman and Moon (1999) described the characteristics of mothers who were supportive for father involvement as the mothers who had nontraditional gender role attitudes, a positive view of interpersonal trust in the relationship, and low hostility toward men.

The association between a mother's viewpoints and father involvement is also demonstrated by fathers' reports. For instance, McBride and Rand (1998) discovered that fathers' perceptions of their wives' confidence in their own parenting and appraisal and their shared parenting philosophy significantly predicted father involvement. In a study of Gaunt (2005), the parents' value priorities related to father and mother involvement was examined. They assumed that parents' values might affect their own involvement as well as the other spouse's involvement. The study showed that parents who preferred openness-to-change values to conservative values have more paternal involvement and less maternal involvement. In addition, when a spouse views "achievement" as a high priority, the other spouse's

involvement increased and his/her own involvement decreased. Harris and Ryan (2004) used a large data set such as the National Longitudinal Study of Adolescent Health (NLSH) in order to show the association between mother involvement and father involvement. They selected items in the NLSH to measure parental involvement in quantity and quality. Their results revealed the influence of mothers on father involvement, in that they stated, “mothers set the context for parental involvement in families, either encouraging fathers to be highly involved with children or organizing activities that involve the entire family, or discouraging fathers from involvement by not taking the lead themselves” (p. 310).

Another stream of studies examining mother’s influence on father involvement is “maternal gatekeeping.” Allen and Hawkins (1999) used the concept of maternal gatekeeping to explain mother’s impact on father involvement. They provided a definition of maternal gatekeeping as “a collection of beliefs and behaviors that ultimately inhibit a collaborative effort between men and women in family work. What they found in this study was mothers who tried to control paternal involvement were likely to be categorized as gatekeepers. Fagan and Barnett (2003) conducted a path analysis to understand the causal relationships among related factors to father involvement. They found that paternal competence directly influenced father involvement and indirectly influenced maternal gatekeeping. Maternal gatekeeping also directly affected the amount of father involvement. This study showed that when fathers are capable of performing their roles, mothers do less gatekeeping, and when mothers’ gatekeeping decreases, fathers are more involved with children. These results imply that mothers may still want to maintain power and control in the households (Lamb & Tamis-LeMonda, 2004).

Interparental Marital Relationships and Father Involvement

Another determinant that may influence the relationship between father involvement and children’s psychological well-being is marital relationship between a father and a mother, which is the basic support system for a family member’s well-being (Belsky, 1986; Cowan & Cowan, 1987). There is a considerable body of literature providing evidence that parents’ marital quality and their parenting are strongly associated (Bradford, 2002; Erel & Burman, 1995; Lamb & Tamis-LeMonda, 2004). This is also supported by family systems theory, in that emotional interactions between spouses make them desire either to stay in the family system or not, which consecutively affect the interactions with children (Aldous, Mulligan, and Bjarnason, 1998). Fincham (1998) stated, “[m]arriage constitutes part of the environment

that may directly influence the child and provides a context that facilitates or impedes effective parenting and may thereby influence the child indirectly” (p. 544).

A number of studies have revealed consistent and straightforward impact of parents’ marital relationships on father involvement: marital harmony encourages father involvement and marital conflict discourages it (Kalil, Ziol-Guest, & Coley, 2005). This association was observed two decades ago by Brody, Pillegrini, and Sigel (1986), in that they found fathers in dissatisfying marital relationship expressed less positive feedback to their child when they were teaching school-related contents. In this study, mothers seemed to be more involved in their child’s education when they had marital conflict with their partners. In the book of “Men’s transitions to parenthood” (1987), several authors (e.g., Belsky & Volling, 1987; Cowan & Cowan, 1987; Dickie, 1987) presented their studies based on parents’ interactions with infants and consistently reported a very similar result that marital interactions had an impact on fathering. The significance of marital quality for fathering was proved once again in Israeli families (Levy-Shiff & Israelashvili, 1988). Coiro and Emery (1998) provided a review of the associations between marital conflicts/status and fathering, and concluded that marital status such as separation or divorce more significantly influenced fathering than marital conflicts did.

The influence of marital relationship on father involvement is revealed in the studies that were conducted by diverse approaches. For example, in the study by Booth and Amato (1994), parent-adult child relationships were examined in the context of high or low marital quality represented by divorce. The results showed that when parents’ marital quality was high, the quality of parent (father or mother)-child relationships was simultaneously high, and that when parents’ marital quality was low, the child tended to be close to only one parent. Through the “Responsible Fatherhood” program, Anderson and her colleagues (2002) also presented the participants’ reports that they received benefits of improving their coparental relationships which encouraged their father involvement.

Some of the studies reported mothers’ perspectives on marital relationships and their ratings about father involvement. Harris and Morgan (1991) stated that fathers whose marriage was described dissatisfying by their wives had less paternal involvement with their children. De Luccie (1996) measured the frequency of father involvement by mothers’ reports, and found that the level of marital satisfaction from a mother’s viewpoint predicted the frequency of father involvement.

Henley and Pasley (2005) examined the influence of the interparental relationship on father involvement based on identity theory. Father identities are “fathers’ self-perceptions

and expectations regarding how they should enact different roles within the father status” (p. 62). According to identity theory, father involvement (identity-related behavior) is influenced by important relationships particularly the interparental relationship, because this relationship encourage fathers to have father identity and furthermore to enact involvement. The results of this study showed that the relationship between identity and involvement became stronger when fathers and mothers had less conflict. In addition, fathers who had good relationships with their wives were highly involved with their children, regardless of their identity satisfaction.

Besides the concurrent relationships, there are the long-term effects of parents’ marital quality on parent-child relationships. Orbuch, Thornton, and Cancio (2000) examined the effects of parental marital quality on mother-child/ father-child relationships, measured at child’s age 18, 23 and 31. The results showed that parental marital quality has stronger and long-lasting effects on father-child relations than on mother-child relations at any child’s age groups. This study also revealed that parental marital quality affected mother-child relations only concurrently. Bradford (2002) also included the longitudinal association between emotional intimacy between parents and fathering into her research. She used two waves of the NSFH data sets and examined the association between emotional intimacy at Wave 1 and father involvement at Wave 2 as well as both at Wave 2. The results provided evidence that marital quality at Wave 1 influenced on fathering at Wave 2 as well as the former at Wave 2 did. She stated that fathering is sensitive to the marital context.

The association between interparental marital relationship and father involvement is also revealed in unmarried couples. Kalil, Ziol-Guest, and Coley (2005) studied the patterns of father involvement among young unmarried families. Even in these families, when teenage mothers have positive relationships with the father and his family, fathers were more likely to be involved with children.

In brief, the review of literature provided evidence that father involvement may affect children’s well-being in given conditions of mother’s influence and interparental marital relationships. These previous studies indicated the consistent relationship between interparental marital relationship and father involvement, but revealed mixed results about the relationship between mothering and fathering. Furthermore, these determinants are not enough to explain the promotion of children’s psychological well-being, especially if children’s own attributes are not considered.

Mother Involvement, Parents' Marital Relationship and Children's Well-Being

Mother involvement and interparental marital relationships are other significant antecedents for children's psychological well-being. Both the relationships between mother involvement and children's well-being and those between parents' marital relationship and children's well-being have been one of the main research topics in family and child sciences. Due to a long history of research on these topics and the wide-ranging findings, a comprehensive review for these exceeds the scope of this study. Rather, a brief review will be provided in this section. The impact of mother involvement on children's psychological well-being will be presented through the studies on mother-child relationship, mothering, and parenting. Moreover, the limitations of mother-focused research in child development will be introduced. Then, the influence interparental marital relationship on children's psychological well-being will be succinctly reviewed.

Mother Involvement and Children's Well-Being. A great number of studies have been conducted regarding mother-child relationships and child outcomes; these have repeatedly presented that maternal care is very critical to better child development (Hart et al., 1997; Penn, 2005). Stolz et al. (2005) stated, "[m]others strongly affect their children's development" (p. 1078). It is evident that a baby's needs are fulfilled at first by a mother's physical and emotional security at first (Furman, 1987). Moreover, there are various benefits from mother involvement. For example, according to Kuczynski and Kochanska (1995), when mothers showed authoritative parenting and encouraged children to perform more competent actions, the children had more social competency and few behavioral problems than other children whose mothers did not. In addition, Schneider, Atkinson, and Tardif (2001) conducted a meta-analysis and showed that the relationships between mothers and children, revealed as attachment, affects peer relationships of the children. In the study by Belsky (1998), he discovered that when mothers provided positive care for their children, the children had fewer externalizing problems such as disobedience, aggressive behaviors, drop-out from school, etc. Jones et al. (2000) measured maternal acceptance when children were in adolescence and discovered that this maternal acceptance significantly predicted lower level of internalizing problems (e.g., depression, low self-esteem, anxiety, etc.) of children in early adulthood, which is a similar finding in the study by Amato (1994). Flouri (2004a) also provided evidence of the positive effects of mother involvement on offspring's well-being, in that mother-child relationship and mother involvement during early childhood (age 7) and adolescence (age 16) influenced life satisfaction of children in adulthood (age 42).

It has been shown that mothers still do more of the child caring than fathers do in spite of the increase in father involvement (Day & Mackey, 1994; McBride & Mills, 1992; Pleck & Masciadrelli, 2004). In addition, mother's influence is still greater than fathers. For instance, in the study by Buehler (2006), inadequate behaviors and attitudes of mothers towards parenting strongly predicted adolescents' internalized problems such as depression and low self-esteem. Hawkins et al., (2006) also provide evidence that mothers are involved in activities and communication with children more than fathers are, even when mothers do not reside with their children.

Yet, there is an argument that the role of mother has been emphasized more (Penn, 2005). As a matter of fact, although researchers have indicated that they studied 'parenting', mostly mothers' behaviors and attitudes have been addressed in parenting research (Barber, Olsen, & Shagle, 1994; Stolz et al., 2005). Along with it, there is controversy against the statement that the caregiver should be the mother (Furman, 1987). Penn (2005) argues that Bowlby's (1969) attachment theory contributed to the development of the notion that mother-child attachment relationship explains most of the child developmental outcomes. However, Bowlby's theory seemed to be more tuned to developmental psychopathology, which caused many researchers to address the associations between problematic mothering and negative children's developmental outcomes, ignoring fathers' contribution to children (Sroufe et al., 2005).

Father-child relationships affect child development critically even for babies or toddlers (Furman, 1987), and at the same time, various kinds of family relationships endow potential benefits to children's well-being as well as mother involvement does (Penn, 2005). For example, the infants looked more sociable to strangers in an experimental situation when they had secured attachment relationship with both of parents than the infants who were with either of the parents in the same situation (Main & Weston, 1981).

In brief, there have been substantial studies about mothers' parenting in family and child sciences. These studies helped to understand the strong influence of mother involvement on child development. However, recently, it has been noticed that father-child relationships are as important as mother-child relationships in order to enhance child development. Therefore, it is necessary to take into consideration both mothers' and fathers' influences regarding children's well-being.

Interparental Marital Relationship and Children's Well-Being. The relationships between marital relationships of parents and various aspects of child development have been frequently addressed in family and child sciences. According to the review by Fincham

(1998), “it is clear that harmonious marriages are associated with more favorable child outcomes, and that troubled marriages are associated with more maladaptive child behaviors” (p. 544). Yet, when the number of the studies about the relationship between marriage and child development is considered, most of the studies have focused on the association between marital conflict and children’s problems rather than that of marital happiness and children’s well-being (Cummings & Davies, 2002; Hart et al., 1997). This may be caused by a societal context that children have lived in an era of family disruption due to divorce, marital disharmony, or unstable family structure like cohabitation (Bumpass & Lu, 2000; Clarke, 1996).

There are numerous studies to provide evidence of the detrimental effects of marital disharmony on child development (Amato, 1998). For example, Zill, Morrison, and Coiro (1993) showed that adolescents from disrupted families had problems in psychological adjustment and academic achievement. In addition, children whose family encountered marital conflicts have suffered from unstable economic circumstances and psychological adjustment problems (Clarke, 1996). After divorce, children experience acute shock, distrust, psychological distress, and loneliness (Moxnes, 2005; Robinson et al., 2005). Some of male children showed antisocial behaviors (Neighbors, Forehand, & Bau, 1997). Gottman (1998) examined the relationship between marital conflicts and children’s problems in a detailed way, in that hostile marital interaction predicts a higher level of externalizing behavioral problems of children as well as it predicts divorce of their parents. Additionally, a demand-withdraw marital interaction predicts higher level of internalizing problems of children. Furthermore, Rodriguez (2001) tested the concurrent and long-term effects of marital disharmony on children’s externalizing and internalizing behavioral problems using the NSFH data sets, and found that interparental marital relationships strongly influenced children’s problematic behaviors.

Yet, there are few studies to present how positive interparental marital relationships promote positive child development (Fincham, 1998). There have been several studies to review and summarize literature regarding the association between parents’ marital relationships and child outcome (e.g., Cummings & Davies, 2002; Fincham, 1994; Troxel & Matthews, 2004; Zimet & Jacob, 2001), but these reflect negative aspects of this association of how negative marital relationships bring out negative child outcomes. This trend of research limits to the understanding of the entire picture of the association between interparental marital relationships and children’s developmental outcomes.

In brief, a great amount of studies about marital conflict and children's negative developmental outcomes have provided a general notion that that parents' marital relationships strongly affect their child development both in a contemporaneous way and a longitudinal way. This supports the hypotheses of this study, although these do not directly show the relationships between positive marital relationships and positive developmental child outcomes.

Person's Factor of Race, Socioeconomic Status (SES)/Poverty, Gender, and Psychological Well-Being

Among several factors affecting psychological well-being, race, SES, and gender have been recognized as the considerable influences on children's psychological well-being in social psychology (McLeod & Owens, 2004). In the Ecological Systems Theory, Bronfenbrenner (1992, 1995) emphasized a person's factor as well as environmental influences for human development. In this section, the relationship between these attributes (race, SES, and gender) and psychological well-being will be reviewed briefly as they relate to the hypothesized model of this study.

The first of three factors affecting psychological well-being is *race*. Scholars have identified the influence of race as one of the primary three factors affecting psychological well-being. They have argued that there is consistent racism, and that minority adults and children experience more physiological and psychological problems than those in the majority (Brown, Wallace, & Williams, 2001; Kessler & Neighbors, 1986; Redmond, 1988). Stock, Okun, Haring, and Witter (1985) analyzed 556 empirical studies with a meta-analytic technique in order to examine the relationship between race and subjective well-being in adulthood. In their study, race accounted for almost 2% of the variance of subjective well-being. In other words, African Americans had slightly lower levels of subjective well-being than Caucasians did. This phenomenon was more prevalent in younger adults than in elderly adults. This difference existed even after controlling for social class, age, and marital status (Thomas & Hughes, 1986). Woody and Green (2001) also tested the influence of race on psychological and social well-being for African American and Caucasian adults and found that race was the most important single predictor of the well-being.

However, not all African Americans have lower psychological well-being. In the study of Mosley and Thompson (1995), the NSFH Wave 1 data showed that children from African American families reported lower externalizing and internalizing problems and

higher sociability scores. They interpreted that these higher scores originated from the characteristics of the sample. The entire sample from this study was from two-parent households: African American children having two parents in households had better emotional outcomes than Caucasian counterparts.

The effect of race/ethnicity on psychological well-being is revealed even when other ethnic groups are included in the studies. Rumbaut (1994) surveyed Asian, Latin American, and Caribbean children of immigrants and found that children who perceive more discrimination have higher level of depressive symptoms. In the study of Brown et al. (2001), African Americans and Hispanic youths reported lower levels of life satisfaction than Caucasian counterparts. This was the case, particularly, when they hold pessimistic perceptions about contemporary race relations. Moreover, they argued that young adults are more likely to have stress related to racism, because they are in the period of searching for and building their careers. Recently, McLeod and Owens (2004) demonstrated again that African American and Hispanic children had higher levels of depression and that Hispanic children reported large school dropout rates.

The second factor affecting psychological well-being is *family socioeconomic status*. Numerous studies demonstrate the negative consequences of low income/SES on major areas of child development such as lower academic achievement, poor physical health, and problematic behaviors/delinquency, holding race constant (Duncan & Brooks-Gunn, 2000). For instance, Felner et al. (1995) provided evidence that socioeconomic disadvantage affected the level of school performance/achievement and socioemotional stress for adolescence. McLoyd (1998) provided a review regarding the effect of socioeconomic disadvantage and child development. She argued that the main areas of the impacts on children's developmental outcomes are cognitive functioning, academic achievement, and socioemotional functioning. Recently, it was confirmed again that family income was associated with the level of externalizing and internalizing problems such as disobedience, impulsivity, anxiety, depression, etc. in adolescence (Dearing, McCartney, & Taylor, 2006).

This influence of poverty is longitudinal: McLeod and Shanahan (1993) showed that persistent poverty had a stronger impact on children's problems more than current poverty. Moreover, McLeod and Owens (2004) revealed that poverty history in early childhood was negatively associated with academic achievement and self-esteem in later adolescence.

The influential power of SES is consistent in adulthood's well-being. Adler and Ostrove (1999) examined the relationship between SES and the overall health of adults, in that individuals who reported higher SES had better health. This was evident across nations;

Diener, Diener, and Diener (1995) compared 55 countries in terms of the predictors of subjective well-being and found that income was highly correlated with subjective well-being. In the study by Lever, Pinol, and Uralde (2005), almost 30% of the variance of well-being was explained by income. They stated that poverty directly influenced individual's subjective well-being as well as it did indirectly through competitiveness, mastery, coping strategy, internal locus of control, and depression.

As researchers have recognized the impact of socioeconomic disadvantage on child development, they also have studied of the process how SES or poverty affects child development, especially through mothering or fathering. Lempers, Clark-Lempers, and Simons (1989) discovered that family economic hardship had both direct and indirect effects on adolescents' psychological distress. In particular, the indirect effect of economic hardship on adolescents' behavioral problems was through unconstructive parenting in terms of less nurturing and inconsistent disciplining. Whitbeck et al. (1991) supported this result in that family economic hardship influenced parental support and involvement, which in turn affected early adolescents' self-esteem. In addition, it was found that poverty is more influential on the quality of fathering, because one of the crucial roles of fathers is an economic provider (Elder et al., 1992). Huston, McLoyd and Coll (1994) also argued that when children are young, lower SES or poverty indirectly affects their psychological well-being, by forming poor home environment.

Overall, there are several parenting-related mediating factors contribute to the relationship between poverty and children's developmental outcomes. These mediating factors are as follows: harsh and inconsistent discipline, low supervision, weak attachment with parents, lack of maternal warmth, exposure to aggressive adult models, parents' mental health, maternal aggressive values, family life acute and chronic stressors, mother's lack of social support, peer group instability, and lack of cognitive stimulation, and neighborhood residency (Dodge, Pettit, & Bates, 1994; Duncan & Brooks-Gunn, 2000; Hofferth, 2003; McLoyd, 1998; Sampson & Laub, 1994).

SES is strongly associated with *race* in influencing children's psychological well-being. Particularly, African American children have been the focus in research, because they are more likely to be disadvantaged socially and economically than are their white counterparts (Rank, 2000). In the study of Mosley and Thomson (1995) using the NSFH data, the percentage of poverty among African American families was higher than that among Caucasian families. The difference in psychological distress between races is more easily found in low-income class than that in middle or high-income class. McLoyd (1990) referred

to African American children's psychological well-being as being more vulnerable in situations that are inclusive of economic loss and poverty. This study showed that poverty affected African American children through parental behaviors, because parents were more likely to feel psychological distress. In other words, it is more likely that parenting of minority groups are shaped by economic conditions (Hofferth, 2003). Demo and Cox (2000) also reviewed the studies in the 1990's and pointed out that low income negatively affects parenting practices and children's developmental outcomes. The influence of income was stronger in African American families than within their Caucasian counterparts.

The third factor to affect psychological well-being is *gender*. Unlike the previous factors of race and poverty which have a straightforward relationship with psychological well-being, the studies about gender and psychological well-being show mixed results (Woody & Green, 2001). Generally, previous studies have shown that girls have better psychological well-being or fewer emotional/behavioral problems than boys (Eme, 1979). Wood, Rhodes, and Whelan (1989) conducted a meta-analysis including 93 studies published between 1963 and 1985 regarding gender difference and well-being. They concluded that women feel greater happiness and life satisfaction than men. This result was supported in the study by Mookherjee (1997) who found that women reported higher levels of life satisfaction than men did. Studies using the NSFH data also demonstrated that adolescent girls demonstrated fewer externalizing and internalizing problems than did boys in two-parent households (Aldous & Mulligan, 2002; Rodriguez, 2000). On the other hand, there is evidence that girls have more psychological problems than boys do. Nolen-Hoeksema and Girgus (1994) argued that more adolescent girls reported depression than boys and carried risk factors for depression. McLeod and Owens (2004) explicated that girls reported a lower level of self-esteem and a higher level of depression than boys. Meanwhile, Leadbeater et al. (1999) reported several gender differences regarding internalizing and externalizing problems in adolescence. For example, girls reported more internalizing problems as opposed to boys who reported more externalizing problems.

Different views also exist regarding which gender is more receptive or vulnerable to parenting practices. These practices resulted in children's psychological well-being or distress. There is evidence that girls' psychological well-being is more susceptible to mothering or fathering practices. Cross and Madson (1997) found that females respond more sensitively to interpersonal conflicts and interactions with parents, resulting in psychological distress. Leadbeater, Kuperminc, Blatt, and Hertzog (1999) also stated that girls have higher levels of interpersonal vulnerability and are affected by previous stressful life events more

significantly than boys are affected. In addition, Operario, Tschann, Flores, and Bridges (2006) provided evidence that female adolescents experienced more emotional distress when they had family conflicts and sought for peer supports more than male adolescents did. Particularly, Flouri and Buchanan (2003a, 2003b) emphasized the impact of father involvement, in that daughters benefited more than sons from father involvement for their psychological well-being. Similarly, Neighbors et al. (1997) and Orbuch et al. (2000) discovered that father involvement was a strong predictor of their daughters' psychological functioning.

Yet, there are contradictory results that boys are more reactive to the relationship between psychological well-being and parenting. Aldous and Mulligan (2002) found that father involvement promoted sons' psychological well-being more than it did girls'. This may occur because fathers engage in more activities with their sons than with their daughters (Aldous & Mulligan, 1998; Harris & Morgan, 1991; Pleck, 1997; Radin, 1994). Additionally, it was discovered that parental control negatively affected boys' emotional well-being, whereas it did not affect girls' emotional well-being and academic performance (Mosley & Thompson, 1995). In particular, when the boys were in poor families, this negative impact was higher than in more affluent families. In a meta-analysis by Reid and Crisafulli (1990), boys were reported having more psychological problems than girls as they were exposed to their parents' marital problems.

Some studies discovered interactions among *race*, *SES* and *gender* related to children's well-being. According to Mosley and Thompson (1995), girls were more influenced by poverty than boys in terms of their academic performance and behavioral problems. Elder, Nguyen, & Caspi (1985) also showed that economic hardship negatively affected the psychological well-being of girls more than that of boys through their fathers' rejecting behaviors. In this study, mothers' parenting behaviors were not changed by income loss. In addition, race and gender were associated in influencing the psychological well-being of adolescents: Hispanic girls reported the higher depressive symptoms than Caucasians girls did when they were adolescents. This difference was not found in relation with adolescent boys' data (Videon, 2005).

Summary

Ecological Systems Theory proposed that human development is influenced by processes, person, contexts, and time factors. This literature review indicated that the influence of father involvement on children's well-being needs to be understood in

association with the mother's influence, parents' marital relationship, and children's attributes. In addition, several studies have supported that there are longitudinal effects of father involvement on child development. Based on these findings, this research examined the relationship between father involvement and children's psychological well-being in a longitudinal manner, considering mother involvement, interparental marital relationship, and children's attributes. The specific methodology is presented in the next chapter.

CHAPTER 3

METHODOLOGY

To examine the long-term influence of father involvement on emerging adult children's psychological well-being, this study used data from the National Survey of Families and Households (NSFH: Sweet, Bumpass, & Call, 1992; Sweet, & Bumpass, 1996, 2002). In this section, a brief presentation about secondary analysis is provided, because this study used and analyzed an existing data set. Then, information about the NSFH data set is presented. Finally, the procedure of sample and item selection, measurements, and data analysis for this study is discussed.

Secondary Analysis with Longitudinal Data

Secondary analysis is a research method that has been increasingly used in family research (Hofferth, 2005; Johnson & Elliott, 1998). According to Kiecolt and Nathan (1985), secondary analysis refers to "a set of research endeavors that use existing materials" (p.10). Commonly, the data sets used for secondary analysis are large-scale omnibus data sets (Hofferth, 2005). Due to the characteristics of large data sets, it is common that the same constructs and data are utilized in various studies, which consequently corroborates validity of the derived measurement from the data sets (Cherlin, 1991).

There are several advantages of secondary analysis, which may not be possible when researchers attempt primary research (Kiecolt & Nathan, 1985). For instance, low cost and easy access to data sets, larger sample size, and nationally represented populations are all advantages (Cherlin, 1991; Hofferth, 2005). The large number of variables that represent various aspects of the constructs is another advantage of secondary analysis (Li, 1996; McCall & Appelbaum, 1991). In addition, many data sets utilize standardized items and indices (e.g., Behavior Problems Index: Center for Human Resource Research, 2004); subsequently, secondary analysis reduce measurement errors that could occur in primary research (Kiecolt & Nathan, 1985).

Most of all, it is beneficial to use longitudinal data sets derived from panels. Panels are the participants who are repeatedly interviewed using the same questionnaires (Frees, 2004; Taris, 2000). In a longitudinal panel study, the series of events taking place in

individuals and families are recorded by time-ordered waves of data collection, which assist in the study of dynamic relationships among families and individuals across time (Brooks-Gunn, Phelps, & Elder, Jr., 1991; Frees, 2004; Taris, 2000). This is one reason why secondary analysis using longitudinal panel data sets are prevalent in the social sciences (Frees, 2004).

There are also disadvantages of secondary analysis: (a) the issue of locating data that researchers aim to study, (b) the potential of misfit between research questions and data, (c) invisible errors that were produced at the primary data collection, but not controllable in the secondary analysis, (d) too few indicators or items for the variables of the study, and (e) too general or limited characteristics of samples (Kiecolt & Nathan, 1985; Hofferth, 2005). These disadvantages need to be considered repeatedly in the process of secondary analysis.

McCall and Appelbaum (1991) argued that the process of conducting research with secondary analysis is different from that of primary research. In primary research, data collection and analysis are the cores of study, but in secondary analysis, it is critical to apply resourceful analytical and statistical methods to data that are already collected by others (Kiecolt & Nathan, 1985). McCall and Applebaum proposed seven steps of secondary analysis: (a) formulating scientific questions; (b) verifying the feasibility of research questions based on the information of sample, measurements, and data collection times; (c) reformulating the questions; (d) creating derived variables; (e) conducting data reduction processes; (f) performing data analysis; and (g) interpreting and publishing.

This study followed this procedure; the research questions of this study were developed based on the theory of interest, the feasibility and availability of the samples and the variables in the existing data of the National Survey of Families and Households (NSFH: Sweet et al., 1992; Sweet, & Bumpass, 1996, 2002), introduced in the next section. Yet, the possibility of disadvantages of secondary analysis was considered. In addition, criteria for sample selection were determined considering the characteristics of the available samples. Constructs and associated measurements were derived from the data based on availability and validity, which was aided by literature review about other studies using these data. The data was reorganized, recoded, and/or standardized in order to conduct the intended analysis. It was expected that this procedure of secondary analysis with the longitudinal panel data would aid in the examination of fathers' long-lasting influences on children's psychological well-being.

The National Survey of Families and Households

The National Survey of Families Households (NSFH) is a national representative and longitudinal survey in the United States. It was conducted by the Center for Demography and Ecology at the University of Wisconsin-Madison. The purpose of this survey was to provide useful data regarding family life, consequently assisting researchers in various disciplines (Sweet & Bumpass, 1996). There have been numerous studies published in family research using the NSFH, presented on the website of the NSFH (<http://www.ssc.wisc.edu/nsfh/bib.htm>).

The NSFH has three waves of data collected between 1987 and 1988 (Wave 1), between 1992 and 1994 (Wave 2), and between 2001 and 2002 (Wave 3). These were collected through a combination of interviews and self-administered questionnaires from a national probability sample selected based on 1985 population projections for Standard Metropolitan Statistical Areas and non-metropolitan counties. In the first wave, 13,007 households were interviewed about their life histories including family living arrangements, histories of marriage, education, employment, parenting style, children's psychological well-being, etc. There were primary respondents who were randomly selected as the adults in a household, secondary respondents who were the partners of the primary respondents, and tertiary respondents who were the householders when the primary respondents were the adult sons, daughters or other relatives of the householders. Among the first sample, 10,007 original primary respondents were interviewed as well as 2,505 focal children who were between 10-23 years old at the second wave. These focal children were divided by two age groups for interviews at Wave 2, in that the questions were differently applied: 10 through 17 years old and 18 through 26 years old. The third wave included 7,277 primary respondents and their spouses/partners, and 1,952 focal children between 18 and 33 years old at the data collection.

The NSFH has several strengths: it included very detailed information about various aspects of each family member's life as well as their interactions (Marsiglio et al., 2000); this data has multiple reporters on the similar constructs (Seltzer et al., 2005); and most of all, this survey contained both parents' responses rather than relying on only mothers' reports, which have been a general trend in child development research (Claire et al., 1998).

In brief, the NSFH is an appropriate data set for this study, because it has been used very frequently and proved its reliability and validity (Marsiglio et al., 2000); in particular, there are several studies that have used the NSFH in order to understand father involvement

(e.g., Aldous & Mulligan, 2002; Bradford, 2002; Mosley & Thomson, 1995; Toth, Jr., & Xu, 1999), and there are numerous studies that use the items for the constructs such as father involvement, children's well-being, parents' marital relationships in other studies that have different topics (e.g., Angeningsih, 2005; Amato & Fowler, 2002; Cooksey & Craig, 1998; Kim & McKenry, 2002; Shapiro & Lambert, 1999; White, 1999). These studies consistently showed that the measurements and samples in the NSFH are trustworthy to utilize.

Sample Selection and Characteristics

Due to the longitudinal design of this study, all three waves of data were used. To keep track of each household including father, mother, and focal child, this researcher set the following criteria: (a) there are focal children's reports about their psychological well-being at Wave 3; (b) the parents whose number of marriages was one at Wave 1; (c) the parents at Wave 1 were married and lived together through Wave 1 and Wave 2; (d) these parents are biological of the focal children; (e) there were both reports from the primary respondents and their spouses at Wave 1 and Wave 2; and (f) there were data from focal children at Wave 2 and Wave 3 (see Figure 1).

The age of the focal children was limited to 19 to 26 at Wave 3, 5 to 12 at Wave 1, and 10 to 17 at Wave 2, because their parents provided better description in these groups rather than the other age groups at every data collection time regarding the variables of interest in this study. The focal children at Wave 1 were considered pre-adolescents, and the ones at Wave 2 adolescents, which was the age division in the study of Videon (2005). Additionally, the focal children at Wave 3 were called emerging adults (ages 19-26), defined as a period of change and exploration of various life directions regarding love, work, and worldview (Arnett, 2000). The inclusion of these three age groups of the focal children in a longitudinal perspective is advantageous, because father involvement or parent-child interactions are different by age groups, yet the same children's developmental paths may be revealed over a period of time (De Luccie, 1996; Flouri & Buchanan, 2003c). This sub-sampling selection of children was aimed to test whether fathers' involvement with their focal children who were in pre-adolescence and adolescence would affect children's psychological well-being even when they are in transition to adults.

Figure 1. The sample selecting procedures for this study.

Through the sample selection procedures, 363 households were chosen for this study. Among these 363 cases, one case was omitted from the study, because this household did not answer more than 4 variables of interest in this study. The demographic characteristics of this household were not different from the 362 cases.

Overall, this sample was comprised of 362 households where there were two parents who married to each other for the first time, have maintained their marital relationship and participated in the survey since Wave 1, and the focal children were the biological children of their parents and have participated in the survey since Wave 2. The criteria for sample selection were expected to help decrease the chances of having a problem of population heterogeneity in a longitudinal panel data (Engel & Meyer, 1996). In order to obtain this

sample, all of the case IDs that were given to each household was matched through Wave 1, 2, and 3. Figure 1 represents the process of selecting the sub-sample for this research.

The demographic characteristics of the parents in the sample are presented in Table 1. Fathers and mothers were their mid-thirties at Wave 1 and their early forties at Wave 2. They were mainly Caucasians and had more than 2 children in household on average. Most of them had completed high school education. The average fathers' annual income was between \$35,000 and \$45,000, and mothers' was between \$10,000 and \$20,000 at Wave 1 through Wave 2 on average. Approximately 15% of fathers and 10% of mothers had previous marital relationships before the current marriage.

Table 1

The Demographic Information of the Sample of Parents (n=362)

	Wave 1		Wave 2	
	Father	Mother	Father	Mother
Age (mean)	36.9	34.6	42.6	40.3
Race				
Caucasian	82.5%	82.1%		
African American	11.1%	11.5%		
Mexican	4.4%	3.6%		
Others	2.0%	2.8%		
Household Income (mean)	\$46,490		\$65,118	
Education				
Completed education (mean)	13.8 years	13.5 years		
More degrees since Wave1			7.2%	7.1%
Number of marriage until W1				
One	84.3%	90.2%		
Two	14.4%	9.2%		
More than three	1.3%	0.6%		
Number of children at Wave 2	2.33		2.50	

Table 2 showed the demographic information about focal children at Wave 3. Almost half of them are males. Approximately 30 % of them were living with a spouse or partner including more than one child. 96.4% of focal children had completed a high school education. Regarding their work status or salary, there are too many missing data to report it. Only 15.7% of focal children answered if they were working for pay when they were interviewed. This may be because they were in the age group that most of them did not have full-time jobs. When the questions were not relevant to them, they did not answer the question related to work or salary.

Table 2

The Demographic Information of the Focal Children (n=362) at Wave 3

	Percentage
Gender	
Male	48.3%
Female	51.7%
Race	
White	78.7%
Non-White	21.3%
Marital Status	
Currently married	17.4%
Currently cohabiting	9.4%
Not married/cohabiting	73.2%
High school diploma	
Yes	96.4 %
No	3.6 %

Building Constructs and Measurements

The principal constructs of this study were father involvement, mother involvement, interparental marital relationship, focal children's attributes, and the focal children's psychological well-being. These constructs and their definitions in this study were evolved from theoretical backgrounds and will be confirmed by data; thus, this study followed theory-driven and data-driven procedures (Pedhazur & Schmelkin, 1991). Unlike other studies where researchers use previously developed and validated measurements for variables of interest, this study searched for items in the NSFH and built measurement with those selected items, which fit to the definitions of the constructs in this study. Additionally, this study included multiple informants' reports for the same constructs, because each informant's perceptions or evaluations on the same phenomena could be different (Larson & Richards, 1994). This would help to reduce potential bias that would be produced by only one informant (Smith & Morgan, 1994). In the search process, it was discovered that there were a few differences in items for each variable, data collection time, and interviewees, which is presented below in a detailed way. Table 3 shows the data collection time and participants for each variable.

Table 3

Variables and Reports per Data Collection Time

Wave 1 1987-1988 (Children age 5~12)		Wave 2 1992-1994 (Children age 10~17)		Wave 3 2001-2002 (Children age 19~26)	
Variable	Reporters	Variable	Reporters	Variable	Reporters
Father Involvement	Fathers	Father Involvement	Fathers	Children's Psychological Well-being	Focal Children
			Focal Children		
Mother Involvement	Mothers	Mother Involvement	Mothers		
			Focal Children		
Interparental Marital Relationship	Fathers	Interparental Marital Relationship	Fathers		
	Mothers		Mothers		
Child Attributes	Primary Respondents (fathers or mothers)				

Father involvement was measured at Waves 1 and 2 by fathers' reports. Mother involvement was also measured at Waves 1 and 2 by mothers' reports. Some of the items for father/mother involvement at Waves 1 and 2 were identical, but some items were added at Wave 2. Interparental marital relationship was measured at Waves 1 and 2 by both fathers' and mothers' reports. Due to the lack of the items for parents' marital relationship at Wave 1, this study used a single-item scale at Wave 1. Additionally, a marital happiness scale, which included eight items, was used at Wave 2. Focal children's attributes was measured by primary parental respondents' reports at Wave 1; with half of the respondents being fathers, and the other half are mothers. Finally, focal children's psychological well-being at Wave 3, as the outcome construct, was measured by focal children's reports.

Since structural equation modeling is the data analysis method in this study, these variables were identified as either exogenous variables or endogenous variables. Exogenous variables refer to the "variables that cause other variables and whose variability is assumed to be determined by other causes outside the causal model" (Dillon & Goldstein, 1984, p. 433). Endogenous variables refer to the variables that are explained by the exogenous variables and the model (Tate, 1998). In this study, the exogenous variables are Wave 1 variables, and all the other variables are endogenous variables. The detailed description of the measurement for each variable is followed and appeared in Appendix B.

Missing Data

In this study, a total score of each variable was calculated based on the function of "Compute" in the SPSS 11.0. The "Compute" statement leaves missing values when it calculates a total score; thus, all of the values in a measure were added to total scores.

The analysis of missing data revealed that father/mother involvement indexes at Wave 2 had a large amount of missing data, in that approximately 20% of data in these indexes was missing. Having missing data is a common problem in large national data sets (McBride et al., 2005). Yet, in an effort to understand whether any difference exists between the respondent group and non-respondent group's data, the demographic characteristics of the group reporting father/mother involvement at Wave 2 were compared to the demographic characteristics of the other group that did not report father/mother involvement. It was found that there was no statistical difference between two groups on several demographic characteristics (i.e., age, race of the parents, household incomes, and years of education).

Missing data were managed not by deletion method but by estimation method, because analysis with a significant amount of deleted data could result in inaccurate results.

Missing data were handled by full maximum likelihood estimation (ML) through the Amos 5.0, when SEM analysis was conducted (Croy & Novins, 2005). According to Allison (2002), full maximum likelihood method is “to choose as estimates those values that, if true, would maximize the probability of observing what has, in fact, been observed” (p. 13). Maximum likelihood estimation is strongly recommended for structural equation modeling, especially when substantial amounts of missing data are discovered in the data set (Allison, 2003; Croy & Novins, 2005; Velicer & Colby, 2005). Schafer and Graham (2002) proposed that the maximum likelihood method is very efficient, particularly when longitudinal data analysis is performed. In addition, full maximum likelihood method utilizes all available data, so large and longitudinal data sets are amenable to estimations of the model parameters (Acock, 2005). Therefore, missing data in this study did not significantly interfere with the analysis and results.

Father/Mother Involvement

The items measuring father involvement and mother involvement are the same at Wave 1 and Wave 2. Father and mother involvement in this study was measured by the quantity of direct contacts with children and by the quality of relationship with the children. The quantity and the quality of involvement are two observed variables for each latent variable of “father involvement” and “mother involvement.”

Father/mother involvement at *Wave 1* is assessed by eight items that were reported by the *primary respondents*, representing the *quantity of father/mother involvement*. At Wave 1, most of the items inquiring about parent-child relationship did not focus only on the focal child but included all of the children in the household; therefore, this study used these seven items despite that limitation, as is commonly used in previous studies (e.g., Aldous & Mulligan, 2002; Bulanda, 2004; Mosley & Thomson, 1995). The items asked “how often do you spend time together in: (1) leisure activities away from home (picnics, movies, sports, etc.), (2) working on a project or playing together at home, (3) having private talks, and (4) helping with reading or homework?” The responses ranged from 1 to 6, representing *never* to *almost everyday*, respectively. Next, the items asked “how often do you behave with their children: (1) praise child, (2) allow child help to set rules, and (3) hug child?” The responses ranged from 1 (*never*) to 4 (*very often*). The last item was asked specifically about focal child, “During the past 30 days, how often did you have an especially enjoyable time with focal child?” It was coded into 1 (never) to 6 (almost everyday).

All scores were summed to a total score. Higher scores reflect fathers or mothers' more frequent involvement with their focal children at Wave 1. The range of total scores for father involvement was 8 to 54 ($M = 31.14$, $SD = 5.33$). The range for mother involvement was the same with that for father involvement, but the mean and standard deviation were different ($M = 32.79$, $SD = 4.90$). The mean of total score of mother involvement were slightly higher than that of father involvement. On the contrary that the standard deviation of mother involvement scores was smaller than that of father involvement scores. The total scores of father/mother involvement were normally distributed. The standardized alpha coefficients are .72 and .71 for father involvement and the mother involvement, respectively.

The *quality of father/mother involvement* reported by the *primary respondents* at Wave 1 was measured by a single item. This item asked about the global relationships between father/mother and a focal child. Responses ranged from 1 (*very poor*) to 7 (*excellent*). The mean scores were 6.43 ($SD = .76$) for father involvement and 6.49 ($SD = .70$) for mother involvement. A single-item measure may reduce reliability (Crocker & Algina, 1986). Nevertheless, it is necessary to include this item, because the quality of involvement should be incorporated in measurement for father involvement (Pleck, 1997), and that the combination of quantity and quality measurement is a tradition in fatherhood research (e.g., Harris & Ryan, 2004; Hawkins et al., 2006).

At *Wave 2*, there were different measures for father/mother involvement reported by both fathers/mothers and focal children because the characteristics of involvement changes with children's ages (Aldous et al., 1998). The items of father involvement and mother involvement at Wave 2 have two different categories of involvement that are the quality and quantity of involvement like Wave 1 variables. These categories were the observed variables for the latent variables of father/mother involvement.

Eight items assessed the *quantity of involvement*, reported by *fathers/mothers*. Among these, four items asked about involvement in school-related life: the number of days in a typical school week, (1) checking on whether (focal child) did (his/her) homework or other school assignment, (2) helping (focal child) with (his/her) homework or other school assignments, (3) talking with (focal child) about school activities or events, and (4) talking with (focal child) about things (he/she) has learned in school; accordingly, these items were coded 0 to 7 days.

The remaining four items asked about father/mother involvement in general life area: during the last week, (1) the number of hours spending time with (focal child), for example, working on homework or a project, in leisure activities, or just having private talks (coded as

the number of hours 1 to 50), and (2) the number of times giving (focal child) a hug or kiss to express affection (coded as the number of times from 1 to 99); during the last 30 days, the frequency of talking about (3) something that was worrying (focal child) and (4) something that (focal child) was excited about or interested in. The last two items' responses ranged 1 (*never*) to 6 (*almost every day*). According to Harris and Ryan (2004), all of these items were considered to promote child development.

Particularly, the items of *the number of hours spent with focal child* and *the number of times giving a hug or kiss* were recoded a few times. These attempts were made to satisfy the normal distribution assumption for multivariate analysis (Tate, 1998). First, there were additional items inquiring whether they spent time together or whether they give a hug or kiss. When the respondents answered, "no" to these questions, it was coded as "0" on the items asking the number of hours or times. Thus, these two items inquiring the number of hours and times had the response ranges of "0 to 50" and "0 to 99," respectively. Next, the distributions of these items were considered. These had too large response range, resulted in positively skewed distributions. There were very few responses over the value "25" in both items, which could affect the whole analysis by inflating chi-square values and underestimating standard errors due to its extreme value (Klem, 2000). Therefore, the values over "25" were recoded into "25," which made a new response range "0 to 25" for both items. Yet, the distributions of both items were still too skewed to be used in the multivariate analysis. Log and square root transformations as well as z-score transformation were attempted, but the distributions were not improved. Finally, the responses of "0 to 25" were grouped and recoded into the scales of "1 to 5," such as the scores of 0 to 5 was recoded into "1", 6 to 10 into "2", 11 to 15 into "3", 16 to 20 into "4", and 21 to 25 into "5." Then, the distributions were acceptable, by satisfying the normal distribution assumption.

The total scores for this observed variable were calculated. A high score means more frequent father/mother involvement with a focal child at Wave 2. The range of total scores for father involvement was 3 to 40 ($M = 20.45$, $SD = 7.19$). The range for mother involvement was the same, but the mean and standard deviation ($M = 25.02$, $SD = 6.50$) were different. The mean of total scores for mother involvement was higher than that for father involvement, compared to the fact that the standard deviation of mother involvement scores was smaller than that of father involvement scores unlike the smaller standard deviation of mother involvement. The standardized alpha coefficients are .72 and .66 for the father involvement index and for the mother involvement index, respectively.

The *quality of involvement* was measured by a single item appraising the global relationship between father/mother and focal child. *Fathers and mothers* reported this in a scale for 0 (*really bad*) to 10 (*absolutely perfect*). The mean for father involvement was 8.52 (SD = 1.25), and that for mother involvement was 8.58 (SD = 1.24).

The *focal children's evaluation of father/mother involvement* at Wave 2 was included in this analysis, because fundamentally fathering/mothering is about relationship that needs be measured from multiple informants (Roggman et al., 2002). Due to the lack of appropriate and available questions for this construct, six items that may represent the quantity and quality of fathers' and mothers' involvement in children's perspectives were chosen. The *quantity of involvement* included two items: (1) the number of hours spending time with father/mother last week, for example, working on homework or a project, in leisure activities away from home, or just having private talks, coded as the number of hours from 0 to 40, and (2) the frequency of compliments by father/mother, coded on a scale of 1 (*never*) to 5 (*almost everyday*). The items of the number of hours spent with father/mother were also recoded due to its extreme skewness. There were very few responses over the value "25" in the items, which could affect the whole analysis due to its extreme value. Thus, the values over "25" were recoded into "25," which made a new response range "0 to 25" for the items. Yet, the distributions were still too skewed to be used in the multivariate analysis. Log and square root transformations were attempted, but the distributions were not improved. Finally, the responses of "0 to 25" were grouped and recoded into the scales of "1 to 5." Then, the distributions were acceptable, satisfying the normal distribution assumption.

The *quality of involvement* perceived by *focal children* was measured by the following questions: (1) "if you felt depressed or unhappy, how likely would you be to talk your father/mother?" and (2) "if you had a major decision to make, how likely would you be talk to your father/mother?" (rated from 1 to 5, representing respectively *definitely wouldn't* to *definitely would talk to him/her*); (3) "how much do you admire your father/mother?" (coded on a scale from 0 as *no admiration at all* to 10 *tremendous amount of admiration*); (4) "taking all things together, on a scale from 0 to 10, where 0 is really bad and 10 is absolutely perfect, how would you describe your relationship with your mother/father?", as a measure of a global relationship quality with father or mother.

Table 4

Item Description of the Constructs of Father/Mother Involvement

Wave 1 (Children's age 5~12)	Wave 2 (Children's age 10~17)	
Reported by Fathers/Mothers	Reported by Fathers/Mothers	Reported by Focal Children
<p><i>The quantity of involvement</i></p> <ol style="list-style-type: none"> 1) Leisure activities away from home (picnics, movies, sports, etc.). 2) Working on a project or playing together at home. 3) Having private talks. 4) Helping with reading or homework. 5) Last 30days, the frequency of having good time one to one. 6) Praising child. 7) Allowing child to help set rules. 8) Hugging child. <p><i>The quality of involvement</i></p> <ol style="list-style-type: none"> 9) Taking all things together, on a scale from 0 to 10, describe your relationship with (focal child). 	<p><i>The quantity of involvement</i></p> <p>- <i>School-related life</i></p> <ol style="list-style-type: none"> 1) Checking on whether (focal child) did (his/her) homework or other school assignment. 2) Helping (focal child) with (his/her) homework or other school assignments. 3) Talking with (focal child) about school activities or events. 4) Talking with (focal child) about things (he/she) has learned in school. <p>- <i>General life area</i></p> <ol style="list-style-type: none"> 5) Spending time with (focal child), just the two of you, for example, working on homework or a project, in leisure activities, or just having private talks. 6) Giving (focal child) a hug or kiss to express your affection. 7) Talking about something that was worrying (him/her). 8) Talking about something that (he/she) was excited about or interested in. <p><i>The quality of involvement</i></p> <ol style="list-style-type: none"> 9) Taking all things together, on a scale from 0 to 10, describe your relationship with (focal child). 	<p><i>The quantity of involvement</i></p> <ol style="list-style-type: none"> 1) The number of hours spending time with your father/mother 2) The frequency of fathers' and mothers' praising you or giving you compliment <p><i>The quality of involvement</i></p> <ol style="list-style-type: none"> 3) If you felt depressed or unhappy, the likelihood to talk your father/ mother. 4) If you had a major decision to make, the likelihood to talk to your father/ mother. 5) The level of admiring your father/mother, on a scale from 0 to 10. 6) Taking all things together, on a scale from 0 to 10, describe your relationship with father/mother.

Total scores for both variables were calculated to represent “the quantity of father/mother involvement” and “the quality of father/mother involvement” reported by children. The ranges of scores were 2 to 10, and 2 to 30, respectively. High scores mean that fathers and mothers were frequently and positively involved with children from focal children’s perspectives. The mean of total scores for father involvement/quantity was 5.48 (SD = 2.41), and that for mother involvement/quantity was 5.70 (SD = 2.22). The mean of total scores for father involvement/quality was 23.93 (SD = 4.36), and that for mother involvement/quality was 24.75 (SD = 3.86). The mother involvement was reported slightly higher in quantity and quality by focal children than father involvement by the children; on the contrary, the standard deviation of mother involvement was smaller than that of father involvement, which is reported by the children. The standardized alphas for the quality of father/mother involvement were .79 and .77. The alpha coefficients for the quantity of father/mother involvement were not provided because of the small number of items.

Table 4 presents all of the items for father/mother involvement in the following page (also see Appendix B).

Interparental Marital Relationships

Interparental marital relationships refer to marital happiness experienced by the fathers and mothers of the focal children in this study. The variable of interparental marital relationship was constructed by a single item of global relationship quality at Wave 1 and an eight-item measure of marital satisfaction at Wave 2 (see Appendix B). There are several questions that examine interparental marital relationship at Wave 1, but only one item addresses positive aspects of parents’ relationship, which was intended to be the focus in this study. Therefore, that item of global relationship appraisal was selected for the variable of interparental marital relationship at Wave 1; this item was also used in the study by Aldous et al. (1998). All of the questions were responded to by both *fathers and mothers* of focal children.

The item at *Wave 1* asked: “Taking things all together, how would you describe your marriage?” The responses were coded into 1 (*very unhappy*) to 7 (*very happy*). At *Wave 2*, the eight-item measure of marital happiness asked: (1) the understanding you receive from your spouse, (2) the love and affection you get from your spouse, (3) the amount of time you spend with your spouse, (4) the demands your spouse places on you, (5) your sexual relationship, (6) the way your spouse spends money, (7) the work your spouse does around the house, and (8) your spouse as a parent. The responses ranged from 1 to 7, where 1 was

very unhappy and 7 was *very happy*. A total score was calculated as a high score of this measure mean that fathers/mothers were very satisfied with their marriage. The range of total scores was 8 to 56 for both fathers' and mothers' reports. The mean for fathers' marital satisfaction was 43.23 (SD = 8.53), and that for mothers' marital satisfaction was 41.41 (SD = 9.93). It indicated that mothers' marital satisfaction is slightly lower than fathers' marital satisfaction. The coefficient alphas for internal consistency were .88 and .91 for fathers' index and for mothers' index. Table 5 presents the content of the items for both waves.

Table 5

Item Descriptions of the Constructs of Interparental Marital Relationships

Wave 1 (Children's age 5~12)	Wave 2 (Children's age 10~17)
<p><i>Global relationship</i></p> <p>1) Taking things all together, describe your marriage, on a scale from 1 to 7, where 1 is very unhappy and 7 is very happy.</p>	<p><i>Marital happiness</i></p> <p>Describe your marriage in the following areas:</p> <ol style="list-style-type: none"> 1) The understanding you receive from your spouse. 2) The love and affection you get from your spouse. 3) The amount of time you spend with your spouse. 4) The demands your spouse places on you. 5) Your sexual relationship. 6) The way your spouse spends money. 7) The work your spouse does around the house. 8) Your spouse as a parent.

Children's Attributes (Race, SES, and Gender)

The children's attributes were represented by race, household total income, and gender. Race was originally coded into 9 categories (Black, White-non Hispanic, Mexican, Puerto Rican, Cuban, other Hispanic, American Indian, Asian, and Others). In this study, this variable was recoded into two groups: White-non Hispanic (valued "1") and the others (valued "0"). It is a common way to compare majority (White) group to minority (non-White) group in previous studies. Then, father's and mother's race was compared and recoded again

for children's race; when father and mother's race was identical, children's race was coded with the same value as the parents' one (1 or 0); when the parents' race was not identical, it was coded into 0, because the children are not exactly White-non Hispanic. The ratio of children's race was approximately 8:2 for White-non Hispanic and the others.

Household total income was used as an indicator for socioeconomic status. According to Krieger, Williams, and Moss (1997), income is a resource-based measure for socioeconomic position, and it is a meaningful measure at the level of household. They pointed out that children's socioeconomic class can be reflected in household where they are raised. In this study, the household annual income collected at Wave 1 was used. The mean household total income was \$43,720 with the standard deviation of \$37,385. The income was increased at Wave 2, in that fathers' annual income was \$40,801 (SD = \$29,866), and mothers' was \$20,258 (SD = \$16,644).

The last indicator of children's attributes was the gender of the focal children. Gender was coded 1 and 0 for males and females, respectively. This sample was composed of almost half of males and half of females (male 48.3%, female 51.7%).

Emerging Adult Children's Psychological Well-Being

Developmental outcome is a "maturational or adaptive status at a particular time of data collection" (Roggman et al., 2002). In this study, developmental outcome of emerging adult children was measured by two indicators of psychological well-being at Wave 3: life satisfaction and self-mastery.

Life satisfaction was measured by eight items to assess several aspects of life satisfaction: what have achieved in school, prospects for career advancement in the future, financial situation, leisure time, friendships, health, love life, and physical appearance. These were coded on a scale from 0 (*extremely dissatisfied*) to 10 (*extremely satisfied*). A summed score was obtained, and the high scores mean that focal children were more satisfied with his/her life than those with low scores. The range of total scores was 0 to 80 (M = 58.71, SD = 9.35). The Cronbach alpha for this index was .74.

Self-mastery included five items: no way to solve some of problems I have, pushed around in life, do anything I really set my mind to do, little control over things that happen to me, and hopeful about the future. These were coded on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The items representing negative aspects of self-esteem were reverse recoded. A summed score was obtained for this variable, and high scores mean that focal children had

more positive self-esteem at Wave 3. The range of total scores was 5 to 25 ($M = 19.88$, $SD = 2.88$). The Cronbach alpha for this index was .65.

Overview of the Constructs

Table 6 presents the means, standard deviations, ranges, and numbers of respondents of all of the indicators in the model. According to this table, the mean scores of the quantity of father involvement are lower than those of mother involvement. Particularly, the difference between the mean score of the quantity of father and mother involvement is large in Wave 2 data; the mean of the quantity of father involvement was 20.45 and that of mother involvement was 25.02. Yet, the standard deviations of the quantity of father involvement are larger than those of mother involvement. These imply that fathers are less involved with their children than mothers are, and that the variation of father involvement in quantity is larger than that of mother involvement in quantity. On the contrary, there was not big difference in the mean and standard deviation of the quality of father and mother involvement both in Waves 1 and 2. Additionally, children's reports about father and mother involvement did not show a big difference, although children perceived that mothers were a little bit more involved with them than fathers were.

In the case of marital satisfaction, fathers reported higher satisfaction than mothers did in both Waves 1 and 2. Yet, mothers' marital satisfaction had more variation than fathers' satisfaction in Wave 2 data. In addition, the high mean scores of marital satisfaction suggest that many of parents in this sample are satisfied with their marital relationship. This may have resulted from the fact that this sample was composed of the parents who have maintained their marital relationship and had biological focal children since Wave 1 data collection.

The means of life satisfaction and self-mastery for the focal children were also high scores. This implies that the majority of focal children group in this study was satisfied with their several aspects of lives and had confidence in themselves. Yet, the variation of life satisfaction of the children was high.

Table 6

The Means, Standard Deviations, Ranges, and Numbers of the respondents of the Indicators

	Mean	SD	Range	<i>n</i>
1. Father involvement/Qn (1)	31.14	5.33	8 ~ 54	324
2. Father involvement/Ql (1)	6.43	.76	1 ~ 7	331
3. Mother involvement/Qn (1)	32.79	4.90	8 ~ 54	314
4. Mother involvement/Ql (1)	6.49	.70	1 ~ 7	344
5. Parents' marital satisfaction /F (1)	6.01	1.19	1 ~ 7	347
6. Parents' marital satisfaction/M (1)	5.96	1.16	1 ~ 7	353
7. Father involvement/Qn (2)	20.45	7.19	3 ~ 40	275
8. Father involvement/Ql (2)	8.52	1.25	0 ~ 10	358
9. Father involvement/Qn/Child (2)	5.48	2.41	2 ~ 10	354
10. Father involvement /Ql/Child (2)	23.93	4.36	1 ~ 25	357
11. Mother involvement/Qn (2)	25.02	6.50	3 ~ 40	261
12. Mother involvement/Ql (2)	8.58	1.24	0 ~ 10	360
13. Mother involvement/Qn/Child(2)	5.70	2.22	2 ~ 10	347
14. Mother involvement/Ql/Child (2)	24.75	3.86	1 ~ 25	353
15. Parents' marital satisfaction/F (2)	43.23	8.53	8 ~ 56	350
16. Parents' marital satisfaction/M(2)	41.41	9.93	8 ~ 56	352
17. Life satisfaction/Child (3)	58.71	9.35	0 ~ 80	356
18. Self-mastery/Child (3)	19.88	2.88	5 ~ 25	360

Note. *n*: A number of respondents who answered a variable; Qn: Quantity; Ql: Quality; F: Fathers' Reports; M: Mothers' Reports; Child: Reported by children; The number in parentheses indicate the data collection time (Wave 1, Wave 2, and Wave 3).

Table 7 presents the bivariate correlation coefficients of the indicators. The highest correlation coefficients were .62 and .57, between the quality and the quantity of father and mother involvement reported by children at Wave 2. This suggests that it is likely that children perceive high quality and quantity of father involvement when they recognize high quality and quantity of mother involvement. There were two negative correlation coefficients; -.14 between self-mastery and parents' marital satisfaction reported by fathers at Wave 1; and -.14 between self-mastery and the quality of father involvement at Wave 2. These may reflect the characteristics of self-mastery that children are likely to be rather more active in their lives, when they have moderate level of difficulties in their family relationships. In addition, the correlations between Wave 1 and Wave 2 parents' marital satisfaction were different in fathers' and mothers' reports; the correlation between fathers' reports of marital satisfaction at Wave 1 and Wave 2 was only .19; on the other hand, the correlation between mothers' reports of marital satisfaction at Wave 1 and Wave 2 was .41. This indicates that mothers who had higher marital satisfaction are more likely to continuously have that level of marital satisfaction than fathers are. In general, most of the correlation coefficients were moderate, between .10 and .40.

Data Analysis

This study used a Structural Equation Modeling (SEM) approach for data analysis. The SEM strategy is one of the new statistical methods that have encouraged secondary analysis (Brooks-Gunn et al., 1991). Statistical software program for the SEM analysis was the AMOS 5.0, which is one of the most popular programs in the social science field. This statistical approach helped reveal the relationships among the contextual variables of father involvement, mother involvement, interparental relationship, and children's attributes, which affect emerging adult children's psychological well-being in a systemic and longitudinal perspective.

Table 7

Bivariate Correlations of the Observed Variables in the Model

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. FI/Qn (1)	1.00																	
2. FI/Ql (1)	.30**	1.00																
3. MI/Qn (1)	.21**	.16**	1.00															
4. MI/Ql (1)	.19**	.22**	.28**	1.00														
5. PM/F (1)	.04	.03	.15**	.12*	1.00													
6. PM/M (1)	.20**	.15**	.15**	.09	.27**	1.00												
7. FI/Qn (2)	.31**	.20**	.21**	.12*	.11	.14*	1.00											
8. FI/Ql (2)	.12*	.26**	.14*	.26**	.18**	.16**	.20**	1.00										
9. FI/Qn/C (2)	.11	.06	.11	.13*	.03	.12*	.26**	.15**	1.00									
10. FI/Ql/C (2)	.05	.09	.14*	.11	.11*	.15**	.22**	.25**	.32**	1.00								
11. MI/Qn (2)	.19**	.11	.21**	.12	-.06	.03	.39**	.08	.14*	.20**	1.00							
12. MI/Ql (2)	.13*	.24**	.04	.17**	.12*	.14*	.06	.37**	.06	.10	.13*	1.00						
13. MI/Qn/C (2)	.07	.09	.05	.09	.04	.01	.13*	.10	.57**	.31**	.26**	.13*	1.00					
14. MI/Ql/C (2)	.03	.08	.11	.09	.05	.02	.18**	.12*	.16**	.62**	.28**	.23**	.37**	1.00				
15. PM/F (2)	.05	.15**	.04	.14**	.19**	.25**	.10	.34**	.09	.19**	.07	.23**	.04	.11	1.00			
16. PM/M (2)	.24**	.21**	.08	.16**	.16**	.41**	.12*	.22**	.07	.19**	.08	.15**	.04	.05	.38**	1.00		
17. LifeSat (3)	.15**	.02	-.04	.03	.002	.13*	-.04	.10	.06	.18**	.04	.18**	.13*	.14**	.08	.20**	1.00	
18. Mastery (3)	.14*	.004	-.06	-.001	-.14*	-.005	.05	-.14**	-.01	-.02	.003	.08	.02	-.01	-.09	-.01	.28**	1.00

Note. FI: Father Involvement; MI: Mother Involvement; Qn: Quantity; Ql: Quality; PM: Parents' Marital Satisfaction; F: Fathers' Reports; M: Mothers' Reports; LifeSat: Life Satisfaction reported by children; Mastery: Self-Mastery reported by children; The number in parentheses indicate the data collection time (Wave 1, Wave 2, and Wave 3); ** $p < .01$, * $p < .05$.

The strength of SEM is that this statistical approach is “always theory-driven” (Volk & Flori, 1996). A theory-driven model may include latent variables as well as observed variables. It is the SEM approach that enables researchers to perform two-level analysis of a measurement model and a structural model including both of latent variables and observed variables (Tate, 1998). It helps not only modeling and testing the strength of the hypothesized model, but also testing relationships between multiple indicators and latent variables and those between latent variables. It is also useful for identifying indirect and total causal effects as well as direct effects, because all of the relevant paths can be tested. For example, there may be a direct effect of Wave 1 father involvement on Wave 2 father involvement, or an indirect effect of interparental marital relationship at Wave 1 through father involvement at Wave 2 on children’s psychological well-being at Wave 3.

The hypothesized model is presented in Appendix A. The model proposed that father involvement at Wave 1 may affect father involvement at Wave 2, which may affect children’s psychological well-being at Wave 3. Mother involvement and interparental marital relationships at Wave 1 may affect the corresponding variables at Wave 2, resulting in psychological well-being at Wave 3. In addition, it was expected that father involvement at Wave 2 may be influenced by mother involvement and interparental marital relationships at Wave 1. Children’s attributes were also expected to affect children’s psychological well-being.

The procedure of data analysis by the SEM approach required multiple steps. First, the assumptions for the SEM approach were examined to determine whether data were appropriate to be analyzed by the preliminary analyses (e.g., histograms, skewness & kurtosis tests, bivariate scatter plots for all pairwise combinations of the variables, missing data and outlier examinations, etc.). Along with that, correlations among variables were examined in order to reduce the chance of multicollinearity problems. Then, the full hypothesized model including measurement model was specified. Next, measurement model fit was examined in order to test the full hypothesized model. After that, the full model was tested by examining the model fit indices and path coefficients of these direct paths: (a) the direct effect of father involvement at Wave 1 and 2 on children’s psychological well-being at Wave 3; (b) the direct effect of mother involvement at Wave 1 and 2 on children’s psychological well-being at Wave 3; and (c) the direct effect of interparental relationship at Wave 1 and 2 on children’s psychological well-being at Wave 3. Then, the indirect paths will be examined as follows: (a) the indirect effect from mother involvement at Wave 1 to father involvement at Wave 2, which affect children’s psychological well-being at Wave 3; and (b) the indirect effect from

interparental relationship at Wave 1 to father involvement at Wave 2, which affect children's psychological well-being at Wave 3. In addition, the full model will be examined with the variables of children's attributes (race, household income, and gender) as control variables. Finally, the overall model fit including all direct and indirect paths was tested. If the model fit was unacceptable, all of these processes were repeated until a good model fit is presented.

CHAPTER 4

RESULTS

This chapter contains two parts: the preliminary analysis of the structure of the variables and the primary analysis for structural equation modeling (SEM). In the preliminary analysis, four prerequisites for multivariate analysis were examined: missing data, outliers, the basic multivariate and SEM assumptions, and multicollinearity. In the primary analysis, the measurement model and the full SEM model were tested and revised until the model fitted to the observed data with theoretical credibility. The analysis was conducted using the Analysis of Moment Structures (AMOS) software version 5.0 (Arbuckle & Wothke, 1999; Arbuckle, 2003).

The Preliminary Analyses of the Data

According to Tate (1998), the preliminary analysis is required for reliable and valid multivariate analysis. He suggested that the basic components of the preliminary analysis are the analysis of missing data, outliers, the assessment of the validity of the multivariate analysis, and multicollinearity. Particularly, the assessment of the validity of assumptions is critical to the SEM analysis, because it could fail to test and interpret causal hypotheses without assuring the validity of assumptions (Bentler & Chou, 1987).

Missing Data

As the analysis of missing data in the chapter 3 was presented, almost 20% of cases had missing scores for the variables of father/mother involvement at Wave 2. However, there was no demographic difference between respondents and non-respondents groups. In addition, the statistical program of AMOS 5.0 handled missing data by full maximum likelihood method. This method was recommended when substantial amount of data are available to be utilized for estimation like longitudinal panel data (Acock, 2005). Therefore, this analysis could proceed with the existence of missing data.

Case Analysis: Outliers

A case analysis was performed to examine outliers that might influence the analysis. Among the 18 indexes in this study, a few outliers were discovered through examination of

skewness and kurtosis tests (more than 2 standard errors of skewness/kurtosis) and the graphical representation of each distribution (Tate, 1998). For example, mother involvement at Wave 1, interparental marital relationships reported by mothers and fathers at Wave 1 and 2, father involvement reported by children at Wave 2, and life satisfaction at Wave 3 revealed higher skewness statistics than 2 standard errors of skewness. Among these, interparental marital relationships reported by mothers and fathers at Wave 1 and that by fathers at Wave 2, father involvement reported by children at Wave 2, and life satisfaction 3 had higher kurtosis statistics than 2 standard errors of kurtosis. In an effort to determine whether the outliers in these indexes might influence of the analysis, the case index of $\Delta\beta$ was examined. This is “the change in the j th regression coefficient when the i th observation is deleted from the sample (Tate, 1998, p. 51). If the case indexes of $\Delta\beta$ exceed the cut-point 2.5, the outliers might interfere with the analysis. However, these case indexes of $\Delta\beta$ did not exceed 2.5. Hence, it was assumed that the analysis would not be swayed by these outliers.

The Assessment of SEM Assumptions

The assessment of the validity of the SEM assumptions was conducted following Bentler and Chou’s (1987) recommendations. They propose 10 statistical assumptions: independence of observations, identical distributions, simple random sampling, functional form, distribution of variables, covariance structures, large sample size, identified model, a priori structural hypotheses, and no parameters on boundary. Among these assumptions, three assumptions required more caution than the others: independence of observation, distribution of variables, and large sample size.

First, the assumption of independence indicated that each variable should be measured independently (Tate, 1998). However, the observations are not exactly independent from each other in this study, because fathers, mothers, and focal children have responded repeatedly through three data collections. Yet, repeatedly measured data are acceptable when the data collections were performed several years apart from each other (Bentler & Chou, 1987). In addition, Klem (2000) argued that the SEM analysis is rather useful particularly with longitudinal panel data, because it can reveal stronger causal relationships across time periods.

The second assumption was normal distribution. There were a number of variables in which the distributions are not exactly normally shaped; for example, interparental marital relationships at Wave 1 was negatively skewed, reflecting the characteristic of this sample that the parents have maintained their marital relationships with their biological focal children since Wave 1. Considering the high rate of divorce in the society, this group might not be a

typical household. In an effort to make skewed distributions normally shaped, log/square root transformations were performed. However, the distributions were not changed substantially after transformation. Still, the skewed variables were included in this analysis without transformation because those variables were critical in this study and multivariate analysis is robust to moderate violations of this assumption (Tate, 1998).

The last assumption checked was related to sample size. This study contained large number of variables with a relatively small number of cases. Thus, the current sample size was examined to determine if it would be appropriate to use SEM analysis with the hypothesized model. There are several rules of thumbs suggested by researchers. For instance, Baldwin (1989) and Lomax (1989) suggested that a sample size should be 200 for SEM analysis. According to Bentler and Chou (1987), the ratio of sample size to number of free parameters needs to be at least 5:1 and better if 10:1. Mueller (1997) suggested that the ratio of number of cases to number of observed variables is recommended to be 15:1 or 20:1, and at least 10:1. In this study, the sample size is 362, which is obviously greater than 200 cases. Additionally, the ratio of the number of sample to the number of free parameters of the hypothesized model was approximately 13:1. The ratio of number of cases to number of observed variable was also 17:1. Therefore, the SEM analysis could be conducted with the hypothesized model and the current sample without a further problem.

Multicollinearity

The bivariate correlations between variables were examined to check whether there is multicollinearity issue (see Table 7). None of these correlation coefficients were above .62, (father involvement and mother involvement at Wave 1), below the typical cut-off point .70 were recommended by Dillon & Goldstein (1987) and Tate (1998).

The Primary Analyses of the SEM

In the primary analyses, two steps of structural equation modeling analysis were conducted. First, measurement models were tested and improved by confirmatory factor analysis (CFA) to determine how measurement models could be further used as part of the full hypothesized model. Then, the full hypothesized model was tested based on theoretical credibility and statistical significance (Tate, 1998). Although the original model did not produce an acceptable model fit, it was improved to obtain the final model having an appropriate model fit. Both of the analyses were based upon maximum likelihood estimation.

Measurement Models

The measurement models in this study were tested separately for each data collection time: Wave 1 measurement model (4 observed variables for father/mother involvement and 2 variables for interparental marital relationships), Wave 2 measurement model (8 observed variables for father/mother involvement and 2 variables for interparental marital relationships), and Wave 3 measurement model (8 observed variables for life satisfaction and 5 observed variables for self-mastery).

Wave 1 measurement model. The Wave 1 measurement model included the three latent variables of father involvement, mother involvement, and interparental marital relationship. Each latent variable has two indicators: quantity and quality variables for father/mother involvement, and mother- and father-reported variables for marital satisfaction (see Figure 2). The specific criteria for global fit indices were as follows: The Root Mean Square Error of Approximation (RMSEA) should be lower than .08 for an acceptable fit and a smaller value than .05 reflects a good fit (Tate, 1998). The Normed Fit Index (NFI), the Incremental Fix Index (IFI), the Non-Normed Fit Index (NNFI), and the Comparative Fit Index (CFI) should be larger than .90 to approve the model (Hoyle & Panter, 1995). The analysis for Wave 1 measurement model showed the following results; global fit indices were RMSEA = .03, NFI = .94, IFI = .98, NNFI = .94, CFI = .98; the chi-square statistic was 8.1 with 6 degrees of freedom ($p > .05$), which means that it was impossible to reject the null hypothesis that the model is correct. All of the global fit indices suggested that the model fit to the observed data. Based on these criteria, the Wave 1 measurement model was acceptable for further use.

The standardized factor loadings ranged between .35 and .77. The standardized factor loading of “marital satisfaction reported by fathers” was moderately low, but was acceptable compared to the minimum cut-off point of .30 (Ferketich, 1991). The squared multiple correlations (R^2 values) of the measures ranged between .12 and .60; fathers’ marital satisfaction explained approximately 12% of variance of the latent variable of interparental marital relationship; on the contrary, 60% of variance of the latent variable of interparental marital relationships was explained by mothers’ marital satisfaction. The quantity and quality of father/mother involvement explained about 25% through 35% of variance of the latent variables of father/mother involvement. The correlation coefficient between the latent variables of mother involvement and father involvement was .66, the coefficient between the latent variables of father involvement and parents’ marital satisfaction was .41, and the

coefficient between the latent variables of mother involvement and parents' marital satisfaction was .32.

$$\chi^2 [6] = 8.1, p > .05$$

RMSEA = .03, NFI = .94, IFI = .98, NNFI = .94, CFI = .98.

Figure 2. Wave 1 measurement model including the standardized factor loadings and the correlations between the latent variables.

Note. MI: Mother Involvement; FI: Father Involvement; Qn: Quantity; Ql: Quality; PM: Parents' Marital Satisfaction; M: Mother's Reports; F: Father's Reports; the number in parenthesis is the data collection time.

Wave 2 measurement model. The Wave 2 measurement model included the same three latent variables of father involvement, mother involvement, and interparental marital relationship. In this wave, father/mother involvement had four indicators including quality and quantity variables reported by fathers/ mothers and the same variables reported by focal children (see Figure 3). The results of the analysis for this measurement model suggested an unacceptable model fit; the highest global fit index was IFI = .625.

To improve the model fit, error covariances were allowed to be free, when the observed variables were measured for the same respondents or by the same questions. Error

variance is “an aggregate of all known and unknown influences of the variable” (Jöreskog & Sörbom, 1988, p. 105). When observed variables are measured from the same respondents or the same items, or at the same period of time, it is likely that error variances are correlated. Having correlations between error terms is helpful to understand “uncaptured sources” of influences for the latent variables in the model (Raycov & Penev, 2001, p. 303). In fact, after error covariances were free, the model fit was improved to accept the measurement model: $\chi^2 [28] = 57.641, p > .001$; RMSEA = .05, NFI = .92, IFI = .96, NNFI = .91, CFI = .96. In addition, among all possible error covariance, only four error covariances were statistically significant ($p < .001$). This model is presented in Figure 3.

$$\chi^2 [28] = 57.641, p > .001$$

RMSEA = .05, NFI = .92, IFI = .96, NNFI = .91, CFI = .96.

Figure 3. Wave 2 measurement model including the standardized factor loadings and the correlations between the latent variables.

Note. MI: Mother Involvement; FI: Father Involvement; Qn: Quantity; Ql: Quality; PM: Parents' Marital Satisfaction; M: Mother's Reports; F: Father's Reports; the number in parenthesis is the data collection time.

The standardized factor loadings ranged from .38 to .65 as the Figure 3 presents. The squared multiple correlations (R^2 values) of the indicators ranged between .14 and .43; the quality and the quantity of mother involvement explained 14% and 20% of the variance of the latent variable of mother involvement, respectively; the quality and the quantity of father involvement explained 24% and 15% of variance of the latent variable of father involvement; father's marital satisfaction explained 43% of variance of the latent variable of interparental marital relationship, and mother's marital satisfaction explained 34% of variance of the interparental marital relationship variable. R^2 values for the focal children's responses about father/mother involvement ranged between .17 and .39. The correlation between the latent variables of mother involvement and father involvement was .62, that between father involvement and parents' marital satisfaction was .57, and that between mother involvement and parents' marital satisfaction was .31. These correlations are very similar to those from the Wave 1 measurement model.

Wave 3 measurement model. The original Wave 3 measurement model included one latent variable of psychological well-being having two indicators of life satisfaction and self-mastery. However, a measurement model of one latent variable only having two indicators was not appropriate to test, because it is an underidentified model (Tate, 1998). Thus, the variables of life satisfaction and self-mastery were separated and tested as two latent variables. These latent variables included the indicators represented by each item. Hence, the latent variable of life satisfaction had 8 indicators and that of self-mastery had 5 indicators.

The model having two latent variables of life satisfaction and self-mastery was tested. However, the model fit was not acceptable in that global fit indices were below .90. To improve the model fit, it was attempted to free error covariance as the Wave 2 measurement model was (see Figure 4). The outcome indicated that the Wave 3 measurement model was acceptable: $\chi^2 [58] = 119.642, p < .001$; RMSEA = .05, IFI = .92, CFI = .92. This suggested that the items for life satisfaction and self-mastery represented each latent variable appropriately. The standardized factor loadings ranged from .42 to .58. The squared multiple correlations (R^2 values) of the measures ranged between .19 and .34; most of the items explained approximately 20 to 25% of variance of the latent variables of life satisfaction and self-mastery. The item of "satisfaction in finance" explained 35% of the variance of the life satisfaction variable. The correlation between life satisfaction and self-mastery was .43. In addition, six error variances of the observed variables were significantly correlated including 1) life satisfaction with school and that with career, 2) life satisfaction with school and that with finance, 3) life satisfaction with finance and that with leisure, 4) life satisfaction with

leisure and that with friend, 5) life satisfaction with friend and that with health, and 6) confidence of doing anything and hopefulness in self-mastery.

$$\chi^2 [58] = 119.642, p < .001$$

$$\text{RMSEA} = .05, \text{IFI} = .92, \text{CFI} = .92.$$

Figure 4. Wave 3 revised measurement model including the standardized factor loadings and the correlations between the latent variables.

The Full SEM Model

Based on the results of confirmatory factor analysis, the full SEM model was examined and revised, until the model fit the data. In the process, the originally hypothesized model was revised several times by reducing the observed variables and seeking parsimony. The model revision process was conducted based on theoretical credibility as well as acceptable goodness of model fit (Tate, 1998). Additionally, the model revision was processed in an exploratory way. Generally, model revision process is based on modification

indices provided by statistical analysis. Modification index informs what path needs to be corrected or improved. However, the statistical software AMOS 5.0 did not provide modification indices, when there were missing data and the estimation for the missing data is preceded. This is a common limitation of statistical softwares for SEM analysis.

Figure 5. The hypothesized model allowing error covariance.

Note. F: Fathers' reports; M: Mothers' reports; Mo: Mothers; Fa: Fathers; Inv: Involvement; Qn: Quantity; Ql: Quality; MR: Marital Relationships; C: Children's reports; The number indicated the data collection time (Wave).

The hypothesized model and the model revision I. Three measurement models were incorporated into the full structural equation model. Figure 5 presents the hypothesized model. This is the same as the originally hypothesized model in the appendix A, exclusive of error covariance. The results of a test for the hypothesized model indicated that the model was not

acceptable: none of the other indices were higher than .90 (the critical value for indices), except CFI = .907 (Tate, 1998). It is recommended that at least two model indices be over .90 in order to accept a model (Hoyle & Panter, 1995). Moreover, some path coefficients did not seem to support theoretical background. For example, father involvement at Wave 1 had a negative influence on father involvement at Wave 2. Also self-mastery at Wave 3 was negatively loaded to the latent variable of psychological well-being. Therefore, the model was inadmissible (Tate, 1998).

The first model revision was conducted to improve model fit. This was performed by reducing the number of observed variables, because the inadmissible results could originate from too large a number of parameters to be estimated with the sample size of only 362 participated (Bentler & Chou, 1987). Therefore, the model was revised, by deleting 4 observed variables reported by focal children at Wave 2 regarding their parents' involvement. However, that revision in the model also produced inadmissible results including the negative error variance.

The model revision II – Separating dependent variables. The simplification of the model was attempted in another way. The second revision resulted in two models. Each model included only one dependent variable: the one having only the variable of life satisfaction and the other having only the variable of self-mastery (see Figure 6). The outcome of the analysis for both models provided acceptable model fit: the model fit indices for the *life satisfaction* model were $\chi^2 [103] = 190.638, p < .001$, RMSEA = .049, IFI = .92, and CFI = .92, and those for the *self-mastery* model were $\chi^2 [103] = 194.546, p < .001$, RMSEA = .05, IFI = .92, and CFI = .91. This implied that two dependent variables were better predicted when they were separated.

$\chi^2 [103] = 190.638, p < .001, RMSEA = .049, IFI = .92, \text{ and } CFI = .92$

$\chi^2 [103] = 194.546, p < .001, RMSEA = .05, IFI = .92, \text{ and } CFI = .91$

Figure 6. The revised models including only one dependent variable of life satisfaction or self-mastery

Note. F: Fathers' reports; M: Mothers' reports; Mo: Mothers; Fa: Fathers; Inv: Involvement; Qn: Quantity; Ql: Quality; MR: Marital Relationships; C: Children's reports; The number indicated the data collection time (Wave).

The model revision III – Without measurement model. Next, it was attempted to simplify the model once more, in order to explore the relationships among the latent variables at Wave 1 and Wave 2. To make a simplified model, all of the latent variables were turned into observed variables by merging the indicators for each latent variable. Hence, the scores of quantity and quality of father involvement were summed, which were the same for those of mother involvement. The variable of interparental marital relationships also had one total score from both fathers' and mother's reports at Wave 1 and 2.

In particular, before summing total scores of father/mother involvement, it was tested whether the scores of quantity increase, as those of quality did. Tables 8 and 9 indicated that the quantity total scores approximately increased along with the quality scores. The mean of mother involvement-quantity scores at Wave 2 were 24.96 in the range between 9 and 37, when the quality score was 7. When the quality score was 10, the mean was 26.31 in the range between 14 and 41. This trend was similar to father involvement at Wave 2. When the quality score was 7, the mean was 20.83 in the range between 3 and 34. When the score was 10, the mean was 21.28 in the range of 7 and 40. In addition, correlations between the quantity and quality scores for father/mother involvement at Wave 1 were .30 and .28 ($p < .01$), respectively. Correlations for these relationships at Wave 2 were .20 ($p < .01$) and .13 ($p < .05$), respectively.

Based on the simultaneous increase of the quantity and quality scores of father/mother involvement, the total scores of father/mother involvement were calculated to be used in the model. High scores imply that fathers/mothers were involved with their focal children with a great amount of quantity (e.g., time, activities, etc.), and that they have high quality relationships with focal children. To assess the reliability of these scales, reliability tests were performed for father/mother involvement Wave 1 and Wave 2 variables. The alpha coefficients for father/mother involvement at Wave 1 were .75 and .74 respectively. Those for father/mother involvement at Wave 2 were .72 and .65. Therefore, these observed variables produced from both quantity and quality scores were included in the model.

Table 8

The Cross Tabulation for Father/Mother Involvement Quantity and Quality Scores at Wave 1

Quality Scores of FI/MI	Quantity Scores of FI			Quantity Scores of MI		
	21	29	34	21	29	34
4				1		
5	1	4	1	1	3	1
6	4	4	5	2	5	11
7		6	18	1	5	19

Table 9

The Cross Tabulation for Father/Mother Involvement Quantity and Quality Scores at Wave 2

Quality Scores of FI/MI	Quantity Scores of FI			Quantity Scores of MI		
	18	28	33	18	29	33
6	1					
7				3		1
8	11	1		3	1	1
9	10	1	2	3	7	1
10	4	2	2	1	4	2

The simplified model (see Figure 7) was tested to reveal the relationships among the main variables of father involvement, mother involvement, interparental marital relationships, and children's life satisfaction and self-mastery. However, the result for this model showed that the model did not fit the observed data. Particularly, global fit indices (NFI, IFI, NNFI, and CFI) were lower than .80, which is much lower than a value of common criterion (.90) for an acceptable model fit.

Figure 7. The revised model without measurement model.

Note. Mo: Mothers; Fa: Fathers; Inv: Involvement; MR: Marital Relationships; Par: Parents; The number indicated the data collection time (Wave).

The model revision IV – Sub-models. In an attempt to simplify the model and to understand the relationships among the main variables of interest in this study, the revised model above was divided into two sub-models. The sub-models are those that include: 1) the relationships between Wave 1 (independent variables) and Wave 3 (dependent variables); and 2) the relationships between Wave 2 (independent variables) and Wave 3 (dependent variables). Along with having the sub-models, it was decided to consider the variable of parents' marital satisfaction as only one exogenous variable to affect father/mother involvement. This was based on previous studies about the effect of interparental marital relationship on father/mother involvement (e.g., Aldous et al., 1998; Fincham, 1998).

When the variable of parents' marital satisfaction was turned into one exogenous variable, the model fit was improved in both sub-models (Wave 1 & Wave 3, and Wave 2 & Wave 3). All of the paths of these sub-models were tested. The statistically insignificant paths were deleted from the model one by one to find out the improvement of model fit. Figure 8 and 9 presented the outcomes of the analysis for both sub-models.

Both models fit the observed data well. Global fit indices for both models showed that these models were statistically acceptable; RMSEA values for both models were lower than .05 and NFI, IFI, NNFI, and CFI were over .90. In particular, mother involvement affected father involvement in both sub-models. Parents' marital satisfaction affected mother involvement at Wave 1, and affected father involvement at Wave 2. The influences on children's life satisfaction and self-mastery were different from each other. Parents' marital satisfaction at Wave 2 affected life satisfaction, but marital satisfaction at Wave 1 did not affect life satisfaction. Also, parents' marital satisfaction at Wave 1 affected self-mastery, but marital satisfaction at Wave 2 did not affect self-mastery. Furthermore, mother involvement was not influential directly on the dependent variables in either of the models.

$$\chi^2 [4] = 6.380, p > .10, \text{RMSEA} = .04, \text{NFI} = .92, \text{IFI} = .97, \text{CFI} = .96$$

Figure 8. The sub-model for the relationships between Wave 1 and Wave 3.

Note. † $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

$$\chi^2 [6] = 7.546, p > .01, \text{RMSEA} = .03, \text{NFI} = .92, \text{IFI} = .98, \text{NNFI} = .95, \text{CFI} = .98$$

Figure 9. The sub-model for the relationships between Wave 2 and Wave 3.

Note. † $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

The model revision V – SEM model without measurement model. The SEM model, including variables from all three waves, was composed again based on the results of the sub-models above. The revised model represented the indirect influence of parents' marital satisfaction on father involvement and the direct influence of mother involvement on father involvement. This model also included the impact of father involvement at Wave 1 and 2 on children's life satisfaction and self-mastery at Wave 3. Yet, all of the variables were observed variables, which mean that there was no measurement model.

The outcome of the previously revised model suggested that the model was statistically acceptable and the causal paths could be proposed again in full SEM model (see Figure 10). The model indices are as follows: The chi-square statistic was 31.146 with 15 degrees of freedom ($p > .01$). The Root Mean Square Error of Approximation (RMSEA) was .05, the Incremental Fit Index (IFI) was .93, and the Comparative Fit Index (CFI) was .92. This model showed that parents' marital satisfaction at Wave 1 indirectly affected father involvement at Wave 1 through mother involvement at Wave 1, which was the same at

Wave 2. In addition, children's life satisfaction was indirectly influenced by parents' marital satisfaction at Wave 1 through marital satisfaction at Wave 2. Father involvement at Wave 1 and 2 affected life satisfaction and self-mastery directly and indirectly. There was no significant direct impact from mother involvement on children's psychological well-being indexes, except through father involvement.

$$\chi^2 [6] = 7.546, p > .01$$

RMSEA = .03, NFI = .92, IFI = .98, NNFI = .95, CFI = .98

Figure 10. The revised model from the sub-model revisions.

Note. Mo: Mothers; Fa: Fathers; Inv: Involvement; MR: Marital Relationships; Par: Parents; The number indicated the data collection time (Wave); † $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

The model revision VI – Full SEM model. The full SEM model including the measurement model was revised again based on the results above. In particular, the variables including two different respondents turned into the latent variables; parents' marital satisfaction (Parent MR1) had two observed variables of fathers' and mothers' reports (F/MR1 & M/MR1), father involvement at Wave 2 (Fa Inv2) had two observed variables of fathers' and children's reports (Fav2 & CFav2), and mother involvement at Wave 2 (Mo Inv2) also had two observed variables of mothers' and children's reports (Mov2 & C/Mov2).

The variables having one respondent group, for example, father/mother involvement at Wave 1 (Fav1 & Mov1), life satisfaction (Life Satis), and self-mastery (Master), were also changed into latent variables. This was conducted by accounting for the error variances of each observed variable in the model (Jöreskog & Sörbom, 1988; Bentler, 1995). Error variance was calculated based on variance and alpha coefficient of each variable; the formula was that error variance of an indicator equals variance of the variable multiplied by $(1 - \alpha)$. Thus, the error variance of Wave 1 mother involvement variable was $26.515 \times (1 - .74) = 6.8939$, and that of Wave 1 father involvement was $31.473 \times (1 - .75) = 7.86825$. The error variance of life satisfaction variable was $87.330 \times (1 - .74) = 22.7058$, and that of self-mastery variable was $8.270 \times (1 - .65) = 2.8945$.

Moreover, both quantity and quality scores of father/mother involvement reported by children were examined to determine whether they increase simultaneously, before using the total score of children's reports of father/mother involvement in the model. It was revealed that as the quantity scores increased, the quality scores also increased. Correlations for the quantity and quality scores for father/mother involvement reported by focal children at Wave 2 were .32 and .37, respectively ($p < .01$). The reliabilities (Cronbach α) of children's reported father/mother involvement at Wave 2 were .75 and .74. Therefore, the total score of father involvement and that of mother involvement reported by children were included as indicators.

Figure 11 showed the results of the analysis for the revised full SEM model. The outcomes indicated that the revised full SEM model was statistically acceptable. The chi-square was 74.688 with 45 degrees of freedom ($p > .001$). Global fit indices were RMSEA = .043, IFI = .95, NNFI = .91, and CFI = .95. All of the path coefficients were statistically significant ($p < .10$).

According to this model, the interparental marital relationship at Wave 1 positively influenced the quality and quantity of mother involvement at Wave 1, and simultaneously,

mother involvement at Wave 1 positively affected the quality and quantity of father involvement at Wave 1. This pattern was revealed at Wave 2 simultaneously, in that interparental marital relationship positively affected mother involvement, which consecutively positively influenced father involvement at Wave 2. In addition, all variables at Wave 1 positively affected each correspondent variable at Wave 2. Interparental marital relationship at Wave 2 was also positively affected by father involvement at Wave 1.

The only variables directly influencing the two dependent variables were interparental marital relationship at Wave 2 and father involvement at Wave 1. Interparental marital relationship and father/mother involvement at Wave 1 indirectly affected life satisfaction. Particularly, interparental marital relationship influenced life satisfaction positively and cumulatively from Wave 1 to Wave 2 and from Wave 2 and Wave 3. This demonstrates the strong impact of interparental marital relationship on children's life satisfaction in their emerging adulthood. Moreover, self-mastery was directly influenced only by father involvement at Wave 1, and indirectly by interparental marital relationship and mother involvement at Wave 1.

Table 10 summarized standardized path coefficients for this final model. The table showed that the variable of interparental marital relationship at Wave 1 was the determinant affecting all of the outcomes. This illustrates the significance of the variable of interparental marital relationship in this model. Also, the R^2 for each outcome indicated the variance explained by determinants. For example, approximately 15% of the variance of father involvement at Wave 1 was explained by the determinants of interparental marital relationship and mother involvement at Wave 1. Additionally, interparental marital relationship, father involvement, and mother involvement at Wave 1 explained approximately 40% of variance of interparental marital relationship at Wave 2.

The dependent variable of life satisfaction was influenced by five determinants: interparental marital relationship at Wave 1, father involvement at Wave 1, mother involvement at Wave 1, and interparental marital relationship at Wave 2. Most of the influences were indirect except interparental marital relationship at Wave 2. On the other hand, self-mastery was directly affected by father involvement at Wave 1. The indirect determinants for self-mastery were interparental marital relationship, and mother involvement at Wave 1. By these determinants, approximately 9% of variance of life satisfaction was explained, and 7% of variance of self-mastery was explained.

Figure 11. The revised full SEM model without control variables.

Note. † $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 10

Standardized Path Coefficients for the Final Full Model without Control Variables

Outcome	Determinants	Causal Effects		
		Direct	Indirect	Total
Mother Involvement at Wave 1 ($R^2 = .093$)	• Interparental Marital Relationship at Wave 1	.256**		.256**
Father Involvement at Wave 1 ($R^2 = .152$)	• Interparental Marital Relationship at Wave 1 • Mother Involvement at Wave 1	.345***	.088**	.345***
Mother involvement at Wave 2 ($R^2 = .176$)	• Interparental Marital Relationship at Wave 1 • Mother Involvement at Wave 1 • Father Involvement at Wave 1 • Interparental Marital Relationship at Wave 2	.373*** .152 [†]	.186** .012*** .034**	.186** .385*** .034** .152 [†]
Father Involvement at Wave 2 ($R^2 = .572$)	• Interparental Marital Relationship at Wave 1 • Mother Involvement at Wave 1 • Father Involvement at Wave 1 • Interparental Marital Relationship at Wave 2 • Mother Involvement at Wave 2	.287** .285*	.130** .316*** .019** .086*	.417** .316*** .304** .086*
Interparental Marital Relationship at Wave 2 ($R^2 = .393$)	• Interparental Marital Relationship at Wave 1 • Father Involvement at Wave 1 • Mother Involvement at Wave 1	.578*** .222**	.020*** .077**	.598*** .222** .077**
Life Satisfaction at Wave 3 ($R^2 = .093$)	• Interparental Marital Relationship at Wave 1 • Father Involvement at Wave 1 • Mother Involvement at Wave 1 • Interparental Marital Relationship at Wave 2	.304***	.182*** .068** .023***	.182*** .068** .023*** .304***
Self-Mastery at Wave 3 ($R^2 = .066$)	• Interparental Marital Relationship at Wave 1 • Father Involvement at Wave 1 • Mother Involvement at Wave 1	.158*	.014** .055**	.014** .158* .055**

Note. [†] $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

The revised model with race, household income, and gender. To determine the influence of children's attributes represented by race, household income, and gender in the full SEM model, these three variables were added into the full model as control variables. However, these three variables were not added simultaneously, but added one by one into the full model. The reason was to satisfy the SEM assumption that the ratio of sample size to free parameters needs to be 10:1, or at least 5:1 (Bentler & Chou, 1987). The ratio of the full model previously presented (without control variables) was approximately 11:1 (362:32). If three control variables are added in the model at the same time, it is likely that the ratio becomes less than 10:1, because the number of free parameters increases. In an attempt to discover significant paths from each control variable and to adjust the number of free parameters of the final full model, three separated models having each control variable were examined at first.

First, the variable of race was added into the full model (see Figure 12). The overall model fit and global fit indices for this model showed this full model was statistically acceptable: Chi-square was 89.148 ($df = 53$, $p > .001$), IFI was .94, CFI was .94, and RMSEA was .043. In this model, the relationships among father/mother involvement, interparental marital relationship, and children's psychological well-being were similarly maintained, compared to the previous full model (Figure 11), even with the influences of race on father/mother involvement at Wave 2 and children's self-mastery. This implies that race does not adversely affect the relationships among father/mother involvement, interparental marital relationship, and children's psychological well-being. Rather, race added more explanation in this picture of familial relationships. Race directly affected father/mother involvement only at Wave 2; White children induced more mother involvement (.15*), but less father involvement (-.11[†]), when children were adolescents. Also, non-White children reported higher self-mastery scores than White children (-.12*).

Second, the variable of household income was added into the full model as a control variable (see Figure 13). This model was also statistically acceptable based on the overall model fit and global fit indices: $\chi^2 [55] = 84.330$, $p > .001$, RMSEA = .038, IFI = .95, NNFI = .91, CFI = .95. Household income did affect the relationships among father/mother involvement, interparental marital relationship, and children's psychological well-being; the influence of father involvement at Wave 1 on children's self-mastery at Wave 3 became non-significant ($p > .10$); and it was revealed that household income strongly affected both father involvement at Wave 1 (.20**) and children's self-mastery (.18**). This implies that the impact of household income on the relationship between father involvement at Wave 1 and

children's self-mastery is so strong that the influential power of father involvement at Wave 1 on children's self-mastery became weak in this statistical model. In terms of the path coefficients, higher household income encouraged more father involvement when children were young (5-12 years old) and affected higher self-mastery of children (19-26 years old) than lower household income does.

Third, the variable of children's gender was added to the full model as a control variable (see Figure 14). The overall model fit and global fit indices showed that this model was statistically acceptable: Chi-square was 84.832 ($df = 52$, $p > .001$), IFI was .95, NNFI was .90, CFI was .94, and RMSEA was .042. As the variable of race did not change the whole relationships in the previous full model (see Figure 12), the variable of gender did not change those relationships; yet, the p -value of the path from father involvement at Wave 1 to children's self-mastery became large, from $p = .039$ to $p = .054$. Additionally, children's gender directly affected mother involvement both at Waves 1 and 2, father involvement at Wave 2, and children's life satisfaction at Wave 3. Mothers were more involved with their sons when they were young children (.14*), but less involved with sons when they were adolescents than with their daughters (-.14*); thus, mothers were more involved with their daughters when they were adolescents. Children's gender did not directly affect father involvement when they were young children, but affected father involvement directly when they were adolescents (.23**); fathers were more involved with their sons than with daughters, particularly when they were in adolescence. In addition, children's gender directly affected the level of life satisfaction at Wave 3 (-11[†]), in that girls reported higher scores of life satisfaction than boys did.

Figure 12. The revised full SEM model with a control variable of race

Note. $\dagger p < .10$, $* p < .05$, $** p < .01$, $*** p < .001$.

Figure 13. The revised full SEM model with a control variable of household income

Note. † $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Figure 14. The revised full SEM model with a control variable of gender

Note. † $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

After identifying the significant paths from each control variable, the examination of the full model with all of three control variables was attempted. At first, all of the significant paths from three separated models were included in the full model. Then, non-significant paths were excluded from the model. This final full model was also acceptable (see Figure 15). The overall model fit and global fit indices are as follows: Chi-square was 114.713 ($df=72, p > .001$), IFI was .93, CFI was .93, and RMSEA was .041. In addition, the ratio of sample size to the number of free parameters was 8:1. Based on the power estimates provided by MacCallum, Browne, and Sugawara (1996), the estimated power was over 0.9 with the sample size of 362 and the degree of freedom of 72.

Almost all of the significant paths were maintained after controlling for all three control variables simultaneously. Interparental marital relationship and mother involvement affected father involvement both in early childhood and in adolescence. Father/mother involvement in early childhood indirectly affected children's life satisfaction in emerging adulthood through interparental marital relationship in adolescence. All three control variables of race, household income, and gender directly and indirectly affected children's life satisfaction and self-mastery in emerging adulthood.

There are three paths that were previously significant paths but became non-significant: 1) the weak influence of race on father involvement at Wave 2; 2) the influence of gender on mother involvement at Wave 2; and 3) the influence of father involvement at Wave 1 on children's self-mastery at Wave 3. Particularly, the path from father involvement at Wave 1 to children's self-mastery was previously significant in the models with only race or gender; thus, this model showed that the influence of income on father involvement in early childhood and self-mastery in emerging adulthood was strong.

Figure 15. The revised full SEM model with three control variables

Note. † $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

The table 11 presents standard path coefficients for the final full model including all of the three control variables of race, household income, and gender. This table showed that father involvement at Wave 2 has the most determinants, which explained 63% of the variance of father involvement at Wave 2 in the model; all variables of Waves 1 and 2 as well as control variables directly and indirectly affected father involvement at Wave 2. Meanwhile, father involvement did not have any significant impact on the dependent variable of children's life satisfaction and self-mastery. Therefore, father involvement in adolescence is a variable influenced by several contextual variables, but did not produce a significant impact on children's life satisfaction and self-mastery. Mother involvement in adolescence also showed a similar result; mother involvement at Wave 2 did not affect children's psychological well-being as father involvement in adolescence did not, and it had several determinants. However, unlike father involvement at Wave 2, the percentage of explained variance was only 16%.

In terms of children's outcomes, life satisfaction at Wave 3 was influenced by household income and gender as well as father/mother involvement at Wave 1 and interparental marital relationship at Waves 1 and 2. Among these determinants, most of them had indirect impact on children's life satisfaction except the direct effect of gender and interparental parental relationship in adolescence. These determinants explained approximately 10% of variance of life satisfaction. In the case of self-mastery, after controlling for three control variables, all of the indirect influences of father/mother involvement at Wave 1, and interparental marital relationship at Waves 1 and 2 became non-significant; and only two direct effects of household income and race on self-mastery were revealed. The percentage of explained variance of self-mastery was 5%.

Table 11

Standardized Path Coefficients for the Final Full Model including Three Control Variables

Outcome	Determinants	Causal Effects		
		Direct	Indirect	Total
Mother Involvement at Wave 1 ($R^2 = .075$)	• Interparental Marital Relationship at Wave 1	.262**		.262**
	• Gender (Male=1, Female=0)	.123 [†]		.123 [†]
Father Involvement at Wave 1 ($R^2 = .151$)	• Interparental Marital Relationship at Wave 1		.087**	.087**
	• Mother Involvement at Wave 1	.332***		.332***
	• Household Income	.194**		.194**
	• Gender		.041 [†]	.041 [†]
Mother involvement at Wave 2 ($R^2 = .163$)	• Interparental Marital Relationship at Wave 1		.160**	.160**
	• Mother Involvement at Wave 1	.318***	.011***	.429***
	• Father Involvement at Wave 1		.032*	.032*
	• Interparental Marital Relationship at Wave 2	.139 [†]		.139 [†]
	• Household Income		.006*	.006*
	• Race (White=1, Others=0)	.144**		.144**
	• Gender (Male=1, Female=0)		.040*	.040*
Father Involvement at Wave 2 ($R^2 = .629$)	• Interparental Marital Relationship at Wave 1	.336**	.109**	.445**
	• Mother Involvement at Wave 1		.266**	.266**
	• Father Involvement at Wave 1	.273*	.017*	.290*
	• Interparental Marital Relationship at Wave 2		.074 [†]	.074 [†]
	• Mother Involvement at Wave 2	.534**		.534**
	• Household Income		.056*	.056*
	• Race (White=1, Others=0)		.077**	.077**
Interparental Marital Relationship at Wave 2 ($R^2 = .360$)	• Gender (Male=1, Female=0)	.222**	.033**	.255**
	• Interparental Marital Relationship at Wave 1	.533***	.020**	.553***
	• Father Involvement at Wave 1	.230**		.230**
	• Mother Involvement at Wave 1		.076**	.076**
	• Household Income		.045**	.045**
Life Satisfaction at Wave 3 ($R^2 = .098$)	• Gender (Male=1, Female=0)		.009 [†]	.009 [†]
	• Interparental Marital Relationship at Wave 1		.159***	.177***
	• Father Involvement at Wave 1		.066**	.068**
	• Mother Involvement at Wave 1		.022**	.022**
	• Interparental Marital Relationship at Wave 2	.287***		.287***
	• Household Income		.013**	.013**
Self-Mastery at Wave 3 ($R^2 = .049$)	• Gender (Male=1, Female=0)	-.107 [†]	.003 [†]	-.104 [†]
	• Household Income	.190**		.190**
	• Race (White=1, Others=0)	-.138*		-.138*

Note. [†] $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

The Results of Hypotheses Testing

Hypothesis 1

The first hypothesis was that there would be positive relationships between the degree of father involvement at Wave 1 and 2 and the level of psychological well-being (life satisfaction and self-mastery) of focal children at Wave 3 both directly and indirectly. The SEM analysis indicated that a part of the hypothesis 1 was supported; the degree of father involvement at Wave 1 indirectly affected the level of life satisfaction of focal children at Wave 3. The degree of father involvement at Wave 2 did not influence any indicator of psychological well-being of focal children at Wave 3.

Hypothesis 2

The second hypothesis examined the influences of mother involvement and interparental marital relationship on father involvement. The hypothesis was that the degree of mother involvement and the level of interparental marital relationships at Wave 1 would indirectly affect the level of psychological well-being of focal children at Wave 3, by affecting the degree of father involvement at Wave 2. The SEM analysis partially supported this hypothesis. The results showed that interparental marital relationship and mother involvement had a concurrent impact on father involvement rather than having longitudinal impact. This means that father involvement at Wave 1 was affected by interparental marital relationship and mother involvement at Wave 1. Also, father involvement at Wave 2 was affected by those two predictors at Wave 2. Moreover, interparental marital relationship suggested an indirect impact on father involvement, compared to the direct impact of mother involvement on father involvement. Interparental marital relationship influenced mother involvement, which consecutively affected father involvement at both data collection times (Waves 1 and 2). In terms of children's outcomes, interparental marital relationship at Wave 2 was a direct predictor of focal children's life satisfaction, and father/mother involvement as well as interparental marital relationship at Wave 1 were indirect predictors of children's life satisfaction.

In addition to these results, each predictor at Wave 1 influenced each corresponding one at Wave 2. Particularly, mother involvement at Wave 1 and interparental marital relationship at Wave 1 strongly influenced each corresponding predictor at Wave 2. This indicated that high degree of mother involvement and parents' marital satisfaction at Wave 1 caused high level of mother involvement and parents' marital satisfaction at Wave 2

consistently. This result supports the study by Aldous et al. (1998), in that the less frequently fathers cared for their infants or young children, the less they were involved with those children 5 years later.

Hypothesis 3

The third hypothesis examined the role of the variables of children's attributes in the model. The hypothesis was that children's attributes represented by race, household income, and gender would affect children's psychological well-being. Additionally, it was hypothesized that after controlling for race, the amount of household income, and gender the relationships among father/mother involvement, interparental relationship, and children's psychological well-being would be maintained. The analyses showed that this hypothesis was partially supported; race, household income, and gender affected their psychological well-being in a different way; and household income overshadowed the relationships between father involvement at Wave 1 and children's self-mastery at Wave 3.

First of all, the result indicated that children's attributes affected children's psychological well-being. Race affected self-mastery; non-White children had higher level of self-mastery than White children. Household income also affected self-mastery; children who were raised in families having higher household income had higher level of self-mastery than children having lower household income. On the contrary, gender did not affect self-mastery, but life satisfaction; girls had higher levels of life satisfaction than boys did.

All of the relationships among father/mother involvement, interparental marital relationship, and children's psychological well-being were maintained, after controlling for race and gender. However, household income affected the relationship between father involvement at Wave 1 and children's self-mastery at Wave 3; this effect became statistically insignificant, after controlling for household income.

These three variables of children's attributes also influenced the variables of father/mother involvement and interparental marital relationship. Race directly affected mother involvement at Wave 2; household income directly affected father involvement at Wave 1; and gender directly affected mother involvement at Waves 1 and father involvement at Wave 2. These children's attributes also indirectly affected father/mother involvement and interparental marital relationship; for example, father/mother involvement at Wave 2 was indirectly affected by household income, and gender indirectly affected father involvement at Wave 1 and interparental marital relationship at Wave 2.

Conclusion

Overall, the longitudinal impact of father involvement on children's psychological well-being was supported by the SEM analysis. In the SEM model, interparental marital relationships and mother involvement were revealed as the contextual effects of father involvement. In addition, children's attributes directly and indirectly affected their psychological well-being. Most of the relationships in the full SEM model were maintained with the influences of race, household income, and gender.

CHAPTER 5

DISCUSSION

Summary of the Study

This study was performed to provide a comprehensive model regarding father involvement and its long-term effect on emerging adult children's psychological well-being, within a contextual influence of mother involvement, interparental marital relationship, and children's attributes. Ecological Systems Theory was a basis for this study. This theory provided a framework that human development is stimulated by four factors: proximal processes, person, contexts, and time (the PPCT model).

To provide a comprehensive model for father involvement and children's psychological well-being, a hypothesized SEM model was created based on previous research. This hypothesized model included three hypotheses: (1) the causal relationships between father involvement and emerging adult children's life satisfaction and self-mastery; (2) the contextual effects of interparental marital relationship and mother involvement on father involvement; and (3) the impact of children's attributes represented by race, household income, and gender on the relationships among father involvement, mother involvement, interparental marital relationship, and children's life satisfaction and self-mastery.

This study utilized data from the National Survey of Families and Households, and analyzed the hypothesized model by structural equation modeling. The variables in the hypothesized model were constructed based on the items in the NSFH. The validity and reliability of each measure was tested and presented. Then, the basic assumptions for SEM analysis were examined before conducting the SEM analysis. Next, three measurement models (Wave 1, 2 and 3) were tested. Finally, the full SEM model was tested and revised until the model acquired theoretical credibility and statistical significance.

The results showed that three hypotheses were supported in part in the final SEM model. First, father involvement in early childhood has a long-lasting effect on emerging adult children's psychological well-being. Second, there are interrelationships among father involvement, mother involvement and interparental marital relationships; mother involvement and interparental marital relationship affect father involvement concurrently both in early childhood and in adolescence. Additionally, it was revealed that the degrees of father involvement in early childhood affect parents' marital quality in adolescence. Also,

interparental marital relationship itself strongly influences emerging adult children's life satisfaction. Third, race, household income, and gender influenced children's psychological well-being in a different way: race directly affected self-mastery; gender directly affected life satisfaction; and household income directly and indirectly affected life satisfaction and self-mastery. Most of the relationships among father/mother involvement, interparental marital relationship, and children's psychological well-being were maintained, after controlling for children's attributes of race, household income, and gender. One exception was that the effect of father involvement in early childhood on children's self-mastery was not significant, when controlling household income.

These results support Ecological Systems Theory, in that human development results from the interaction between individual and environment (Bubolz & Sontag, 1993). Also this study confirms again that family is a "nested" ecosystem in which each individual influences each other (Bronfenbrenner, 1979).

Implications

The Longitudinal Influence of Father Involvement

This study showed that father involvement has the influential power on children's psychological well-being in emerging adulthood. This result supports previous studies that there are the effects of father involvement on child development (e.g., Cult et al., 2000, Downer & Mendez, 2005; Harris et al., 1998). It has indicated that the more fathers are involved with children positively and actively, the better children develop their well-being in a longitudinal view. Biller and Kimpon (1997) stated that father involvement itself has a crucial impact on child development, even if there are several variations in father involvement.

This study demonstrated the unique effect of father involvement on child development. Amato (1994, 1999) pointed out that fathers contribute to their children's psychological well-being distinctively. In this study, father involvement in early childhood was directly influential on children's self-mastery, even after controlling for mother involvement and parents' marital relationship in the model of no control variable. Meanwhile, the direct impact of father involvement on self-mastery was not strong in the model of three control variables. In particular, when controlling for household income, this effect of father involvement on self-mastery became weaker and insignificant. This may be caused by the

strong factor of household income in the SEM model, in that household income overpowered the effect of father involvement in early childhood on children's self-mastery. In addition, this model is conservative, including triadic relationships of fathers, mothers, and children as well as their reports, three-wave data, and three control variables of race, household income, and gender. Therefore, the potential effect of father involvement on children's psychological well-being may not be revealed as much as it could be. Still, it cannot be ignored that father involvement had an indirect impact on an aspect of children's psychological well-being. In particular, it is meaningful to find that father involvement in early childhood indirectly influenced children's life satisfaction.

In the meantime, mother involvement did not show any direct impact on children's psychological well-being in any final SEM model either of having no control variables or three control variables. This result may conflict with some previous studies that mothering is the most crucial and direct predictor for child development (e.g., Hart et al., 1997; Penn, 2005). Yet, there are also several studies proposing that father involvement had a unique or even stronger impact on child development than mother involvement (e.g., Flouri & Buchanan, 2003a; Lewis & Lamb, 2003; McBride et al., 2005; Videon, 2005). Therefore, there may be no definite conclusion that either fathering or mothering is more important than the other. This ambiguity may originate from the fact that previous studies use different samples and measures respectively. Furthermore, even if mothering is influential on children's negative aspects of psychological well-being (e.g., depression, delinquency, school drop-out), mother involvement is not substantial on children's positive aspects of psychological well-being.

Another critical finding is that the impact of father involvement in this study was long-lasting. In this study, father involvement in early childhood had a stronger effect on emerging adult children's psychological well-being than father involvement in adolescence had. In fact, father involvement in adolescence was not significantly related to children's psychological well-being in emerging adulthood. Considering the fact that children at age 5 and 6 start exploring various outside settings more than before, positive support from fathers could be a good foundation for the children's later psychological well-being (Biller, 1993; Biller & Kimpton, 1997; Herbert, 2004). Hence, the impact of father involvement is prolonged from early childhood to emerging adulthood. This long-term effect of father involvement on child development has been revealed by previous studies (e.g., Flouri & Buchanan, 2002, 2003b; Snarey & Maier, 1993; Williams & Radin, 1999). These studies

commonly found that early father involvement is critical for children's later psychological well-being.

Finally, the effect of father involvement was revealed in positive developmental outcomes. One of the trends in previous studies has been to show the association between father involvement and negative child developmental outcomes. It has been found that the lack of father involvement contributes to poor child development (Carlson, 2006; Rodriguez, 2000; Williams & Kelly, 2005). However, it has rarely been studied that father involvement encourages positive child outcomes. This study shows that particularly higher levels of father involvement helped children to have better psychological well-being than children who experienced lower levels of father involvement. The weakness of association between father involvement and psychological well-being of children in emerging adulthood that exists in this study may be influenced by the fact that measures of negative outcomes have been more clearly measured than positive outcomes. Thus, it is noticeable that father involvement has a unique and better impact on positive child outcome.

The Contextual Impacts of Mother Involvement and Interparental Marital Relationship

In this study, the impact of father involvement was tested in the contexts of mother involvement and interparental marital relationships. Roggman et al. (2002) indicated that father research needs to be performed by advanced statistical methods to examine the interactions among family members over time and the contextual effects on it. The results of this study show that contextual factors affect father involvement. Particularly, the influences of mother involvement and interparental marital relationships on father involvement were strong in contemporaneous relationships. Additionally, the directions of these influences were similar in both early childhood and adolescence of their children. In other words, interparental marital relationships affected mother involvement, and mother involvement affected father involvement. Although there are few studies including all of these three factors and examining the relationships among them, several studies indicate that mother involvement and interparental marital relationship influence father involvement (e.g., Booth & Amato, 1994; Brandth & Kvande, 2005; Harris & Ryan, 2004; Kalil et al., 2005; McBride & Rane, 1997).

Particularly, the characteristics of relationship between mother involvement and father involvement seem mixed in previous studies. Some mothers encourage their spouses to be with their children, while others don't. Research shows that this preference is related to mothers' cognitive viewpoint (De Luccie, 1996; Gaunt, 2005; Hoffman & Moon, 1999;

McBride & Rand, 1998). In other words, how much mothers value fathers' involvement affects the degree of father involvement. This study found that how much mothers are involved influence the degree of father involvement. The result was that the more mothers are involved with their children, the more fathers are involved with children as well.

Interparental marital relationship is another significant factor for father involvement. This study examined the effect of the positive marital quality and father involvement. This was a different perspective from previous studies that focused on negative marital quality and negative outcome of father involvement (e.g., Brody et al., 1986; Coiro & Emery, 1998). In this study, positive interparental marital relationships influenced father involvement in both direct and indirect ways, and both in concurrent and longitudinal ways, unlike the influence of mother involvement. For example, interparental marital relationships indirectly affect father involvement through mother involvement in early childhood and directly affect father involvement in adolescence. Previous literature (e.g., Booth & Amato, 1994; Bradford, 2002; Erel & Burnam, 1995; Lamb & Tamis-LeMonda, 2004) have considerably shown that parents' marital relationship significantly affect the shape and characteristics of parent-child relationship. In particular, marital satisfaction was a stronger predictor of father involvement than other aspects of marital relationships like marital agreement over family matters (Levy-Shiff & Israelashvili, 1988). Moreover, this study showed that father involvement in early childhood directly affected interparental marital relationship in adolescence. Therefore, this study supports the solid association between interparental marital relationship and father involvement.

Mother involvement and interparental marital relationship also have effects on children's positive aspects of psychological outcomes. Although there is no direct effect of mother involvement on either children's life satisfaction or self-mastery, mother involvement in early childhood gives its influences indirectly on children's life satisfaction. This result is not concordant with previous studies. It has been well known that mothers strongly affect child development (e.g., Hart et al., 1997; Stolz et al., 2005; Penn, 2005). Hawkins et al. (2006) argued that mothers do more caring and communications with their children than fathers do. However, previous studies have focused on negative outcomes such as aggressive behaviors, drop-out from schools, depression, and low self-esteem (Amato, 1994; Belsky, 1998; Buehler, 2006; Jones et al., 2000). Unlike previous studies, this study focused on positive outcomes of children in emerging adulthood such as life satisfaction and self-mastery. Therefore, this study did not capture the relationship between mother involvement and children's psychological well-being due to the characteristics of the child outcome.

In addition, interparental marital relationship represented by marital satisfaction had the strongest influence on children's life satisfaction, which was also a positive aspect of psychological well-being. The effect of interparental marital relationship was strong and longitudinal, in that the influences were cumulative from interparental relationship in early childhood and adolescence. This result supports previous literature in that parents' marital quality is critical to children's developmental outcomes (Fincham, 1998). Particularly, this result emphasizes the significance of harmonious marital quality as much as troubled ones. As Amato (1998) pointed out, numerous studies have indicated that conflicts in marital relationship affect child development detrimentally. This study shows that how important continuous marital satisfaction is for children's life satisfaction in emerging adulthood. It is possible that children observe and learn how their parents have satisfaction in several areas of marital quality. This could be transferred to children's own life satisfaction. Thus, the importance of interparental marital relationship in child development cannot be ignored.

Finally, father involvement and mother involvement with adolescents included parents' and children's reports. This means that the results in this study are more trustworthy than studies including only parents' reports. Roggman et al. (2002) argued that multiple informants, especially children are critical in family research. However, the fact that data about father/mother involvement in adolescence had multiple informants may cause the weak association between these factors and children's psychological outcomes.

Children's Attributes and Their Psychological Well-Being

This study included race, household income, and gender as children's attributes in the SEM model. These children's attributes affected their psychological well-being directly and indirectly. This demonstrates that the characteristics with which children grow up have consequences for various areas of children's life, such as social competence, academic achievement, occupational attainments, psychological well-being, etc. (Hernandez & Brandon, 2002). In addition, this supports Ecological Systems Theory that child outcomes are not simply produced by interactions with parents, but also by their own attributes (Bronfenbrenner, 1995).

First, race and household income directly affected self-mastery. The higher household income children were raised in, the better self-mastery they had, and non-White children are more likely to have higher self-mastery than their counterparts. The effect of household income agrees with previous studies that the level of SES or income affect child development (e.g., Dearing et al., 2006; McLeod and Owens, 2004; McLoyd, 1998). On the other hand,

non-White children's higher self-mastery does not exactly match with previous literature. Several studies show that minority children are more likely to have lower self-esteem or life satisfaction and higher level of depression, etc. (Brown et al., 2001; Kessler & Neighbors, 1986; Redmond, 1988; Stock et al., 1985). This variation may be caused by the positive characteristic of the outcome variable of self-mastery. Non-White children may need to strive more than White children to achieve what they desire, which contribute to higher self-mastery. Furthermore, Mosley and Thompson (1995) provided evidence that African Americans had lower externalizing and internalizing problems and higher sociability scores. Therefore, how much race affect psychological well-being and what aspect of psychological well-being is influenced by race needs to be more speculated and further studied.

Second, household income indirectly affected children's life satisfaction in emerging adulthood. This indirect effect of household income indirectly affected life satisfaction through father involvement in early childhood and interparental marital relationship in adolescence. This means that fathers are more involved with their young children as household income increases. The increased father involvement positively affects the level of parents' marital satisfaction in adolescence, which produces better life satisfaction of children in emerging adulthood.

Third, girls are likely to have better life satisfaction than boys, although this gender effect was not strong. This might happen because of another indirect effect of gender on life satisfaction is through mother/father involvement in early childhood and interparental marital relationship in adolescence. Sons in early childhood may experience more mother involvement, which consequently influenced father involvement, interparental marital relationship, and life satisfaction. Still, this small impact of gender on life satisfaction could be meaningful, considering a strong effect of interparental marital relationship on life satisfaction in the model. Previous studies have debated about gender difference in psychological well-being (Woody & Green, 2001). However, there is evidence that girls develop better psychological well-being than boys do (e.g., Aldous & Mulligan, 2002; Eme, 1979; Mookherjee, 1997; Rodriguez, 2000; Wood et al., 1989). Therefore, this study supports previous studies showing gender difference that girls have better psychological well-being.

Moreover, race, household income, and gender directly affected father/mother involvement. First of all, this study showed that white children are more likely to have good relationships with mothers when they are adolescents than do non-white children. This demonstrates that race of children may produce differences in father involvement and mother involvement when the children are adolescents. Since previous studies have often shown the

interrelationships between race and SES and its compound effects on parenting (e.g., Demo & Cox, 2000; Hofferth, 2003), it is hard to conclude that father/mother involvement could be shaped only by children's race. Yet, the significance of race regarding father/mother involvement increases when children are adolescents; particularly, from the point that household income did not directly affect father/mother involvement at Wave 2, but only affected father involvement at Wave 1.

In the case of the direct effect of household income on father involvement, fathers who have higher household income are more likely involved with their children than are their counterparts, particularly when their children were young. The positive relationships between household income and father involvement could be related to several facts; that fathers of "Good Provider" could spend time with their children more easily than the counterpart (Carlson & McLanahan, 2004); and that mothers in workforce need more father's caring for their children than housewives (Amato, 1994; Anderson et al., 2002), which is the case, especially when children are young. Additionally, household income reflects the contribution of fathers to their children's lives; the values of household income were added from fathers' and mothers' incomes; and fathers' incomes were bigger than mothers' in most of the cases (more than 80%). Therefore, the relationship between household income and father involvement may represent another potential aspect of father involvement: financial providing

Gender also had the direct effects on father/mother involvement in various ways. In terms of direct gender effects, mothers were more likely to be involved with their sons when they were young children. Fathers were more involved with their sons than with their daughters in adolescence. Particularly, the effect of gender on father involvement in adolescence was strong. Although some researchers have argued that the same-gender bonding begins when children are born (e.g., Lamb, 2002), this study showed that the same gender parent-child relationships are improved when children became adolescents. This result is reasonable in terms of the developmental phase of adolescence: they need to be transformed into young adult males and females physically and psychologically (Herbert, 2004). Therefore, the same-gender parents' supports would be more important in adolescence than in early childhood.

Meanwhile, most of the relationships among father/mother involvement, interparental marital relationship, and children's psychological well-being were maintained, after controlling for these attributes in the SEM model. Thus, those interrelationships in family systems are present even with the influences of race, household income, and gender. One

exception was the effect of father involvement in early childhood on children's self-mastery in emerging adulthood; this effect became insignificant when controlling for household income. This result implies again that household income is a strong factor affecting father involvement and self-mastery.

Limitations

This study had a few limitations despite its several findings listed above. First, a substantial amount of missing data was revealed particularly in the data of father/mother involvement at Wave 2; approximately 20% of the data were missing. In this study, full maximum likelihood estimation method was used to replace missing data (Allison, 2002, 2003). Although it is an efficient method (Schafer and Graham, 2002), basically estimated data and observed data is not the same. Therefore, the results of this study could be biased by estimated data.

The second limitation is that the results are produced from secondary data, not primary data, so this study was performed with the inevitable disadvantages of secondary analysis. Although this study had the advantages of secondary data analysis, such as nationally represented populations, various aspects of family interactions, and large sample size, it also was challenged by limited variables or items of interest (Cherlin, 1991; Hofferth, 2005; Kiecolt & Nathan, 1984; Li, 1995; McCall & Appelbaum, 1991). Particularly, the quality of father/mother involvement was partly represented in this analysis by one item. Moreover, the SEM analysis did not produce an acceptable model fit, when the quality and quantity variables were separated. Consequently, these two variables could not be separately examined, unlike the originally hypothesized model.

Third, children's psychological well-being variable had only two indicators, life satisfaction and self-mastery. Psychological well-being has been addressed using several indicators such as psychological distress, self-efficacy, depression, optimism, purpose in life etc. (Flouri, 2004a; Flouri & Buchanan, 2003; Keyes et al., 2002; Ryff, 1989). In this study, only life satisfaction and self-mastery represented psychological well-being. These two aspects of psychological well-being might not be enough to test the full effect of father/mother involvement. This might be a reason why father involvement at Wave 1 had a weak impact on self-mastery and why father/mother involvement at Wave 2 did not show any effect on emerging adult children's psychological well-being.

Fourth, the aspect of interparental marital relationship was not fully represented. Marital quality has various characteristics such as satisfaction, happiness, adjustment,

adequate communication, integration (Lewis & Spanier, 1979). In the NSFH data set, there are items about disagreement, fairness, and conflict. However, only satisfaction items were included in this analysis in an effort to focus on positive aspects of marital relationships. Yet, this aspect might not reveal the associations with other variables of interest in this study.

Fifth, the concurrent influences of father/mother involvement and interparental marital relationship in emerging adulthood of children were not included in this study. Additionally, parents' marital status in emerging adulthood was not considered due to a great amount of missing data. Considering the year gap between Wave 2 (1992 – 1994) and Wave 3 (2001-2002), any change in parents' marital status could exist. This change or any concurrent influences around children could affect their psychological well-being in emerging adulthood. Therefore, it is uncertain how much earlier experiences with parents can explain future psychological well-being without controlling for concurrent influences.

Sixth, the portions of explained variance of children's life satisfaction and self-mastery were small (less than 10%). This means that there are other predictors to explain emerging adults' life satisfaction and self-mastery. Also, the SEM model of this study may need to be improved, by including other indicators or latent variables. Although the model fit for the full SEM model was acceptable, this model did not fully explain how children in emerging adulthood have better psychological well-being.

Seventh, this study focused only on families having marital stability, so psychological well-being of children from single father/mother households or stepfamilies was not investigated. It has been well known that children who experienced parents' marital disruption or instability are more likely to have lower psychological well-being (Fincham, 1998). Hence, the interrelationships among parents' marital relationship, father/mother involvement could be different those from parents who maintained their marital relationships. These differences need to be examined to promote children who experienced parents' marital instability.

Implications for Practitioners

Promotions for Children's Healthy Well-Being

One of the purposes of this study was to find out the ways to promote children's healthy psychological well-being in family context. The outcomes were positive sides of psychological well-being: children's life satisfaction and self-mastery. This study provides clues about *what to do* in families for their children well-being rather than focusing on *what not to do* as do previous studies (Cowen, 2000). In addition, this study showed that what

parents need to do when they were young for children's later psychological well-being. Since emerging adulthood is a developmental phase when they need to explore the world independently, it is necessary to know how to help them to improve related psychological characteristics in a longitudinal perspective. These suggestions are cooperated with Ecological Systems Theory that processes (father involvement), person (children), contexts (mother involvement and parents' marital relationship), and time produce children's positive developmental competence (Bronfenbrenner, 1999, 2000).

First, fathers are one of the critical figures in children's lives. Fathers' caring, nurturing and involvement benefit children's various aspects of well-being (Lamb & Tamis-LeMonda, 2004). Particularly, this study shows that early father involvement is possibly critical to children's future psychological well-being. As there are clear differences in what fathers and mothers do with their children (Belsky & Volling, 1987; Lamb, 1995; McBride & Mills, 1993; Whiteside-Mansell et al., 2001), what fathers contribute to their children's development can be different from what mothers do. In this study, children's self-mastery is suggested as a possible unique outcome of positive father involvement. This implies that there could be other aspects of positive children's outcome that are uniquely influenced by father involvement. Additionally, this study indicated that how much fathers spend time with their children when they are young is critically important for children's later psychological well-being; for instance, if fathers have a good relationship with their children and spend meaningful time together once a week, their life satisfaction and self-mastery would be enhanced later. Thus, most of all, family educators need to recognize the significance of father involvement and make an effective support for father involvement and children's positive well-being. Furthermore, early father involvement in early childhood seemed more crucial than father involvement in adolescence. Therefore, family life practitioners and educators need to encourage fathers to learn earlier how they can be involved actively and positively with their children. When educational programs for father involvement are targeted to new parents having the first babies, it will be more beneficial than parents who have adolescent children. In addition, early father involvement affected parents' marital relationship in children's adolescence in this study, so the importance of father involvement in early childhood is emphasized.

Second, active mother involvement and satisfactory parents' marital relationships are prerequisites to encourage father involvement. Numerous studies have proved that father involvement is context-oriented (e.g., Brandth & Kvande, 2005; Doherty et al., 1998; Fincham, 1998; Levy-Shiff & Israelashvili, 1998). This means that what or how much fathers

do with children is related to what mothers do with children and how they consider fathers' involvement, as well as how happy couples are in their marriage. This study suggests that it is important to promote interparental marital relationships and positive mother involvement first. Particularly, early father involvement resulted from these prerequisites in early childhood also affected interparental marital relationships and positive mother and father involvement in adolescence. It means that the contextual effect in early childhood is more important than that in later childhood. Therefore, family life educators need to consider mothers' factors and parents' marital relationship, when they help father-child relationships. In fact, this requires more complex programs, because it should be beyond mother-focused or marriage-focused support system and combine all of the related familial factors for child development. Although it is not as simple as one-targeted program or support system, a complex program for father/mother involvement and parents' marital relationship will be effective.

Third, parents' marital relationship is critical to children's future life-satisfaction. The crucial role of interparental marital relationship in child development has been addressed frequently in previous literature, but mostly negative associations between marital conflict and child developmental outcomes (Fincham, 1998). This study focused on positive child outcomes from parents' healthy marital relationship. Particularly, this study demonstrates its cumulative and strong effect on children's life satisfaction. In fact, interparental marital relationships from early childhood to adolescence were the strongest effect on emerging adult children's life satisfaction. Therefore, how happy a father and a mother are in their marriage is more important than how much they are involved with their children. If parents are in conflict and simply attempt to care for children, future life satisfaction will not be improved much. This suggests again that family life educators need to protect and promote healthy marital relationship between fathers and mothers, which will contribute to children's well-being consecutively.

Fourth, race, household income, and gender need to be considered to promote father/mother involvement, interparental marital relationships, and children's psychological well-being. Particularly, the effect of household income on father involvement and children's psychological well-being was substantial in this study. Thus, low-income families need to be benefited from various family support programs to encourage father involvement and to produce better psychological well-being of children. Since non-White children had better self-mastery, it is not necessary to assume that the whole aspects of psychological well-being of minority children would be vulnerable. Rather, this study shows that some of the indicators of psychological well-being could be better in minority groups of children than majority

group. Another point from this study is gender effect and children's age; mothers are less involved with their daughters when they are young than their sons; fathers have better relationship with their sons than with their daughters when they are adolescents; also, female emerging adults have better life satisfaction than male adults. All of these results imply that family support programs need to be specified and differentiated by each target population, not simply be developed and applied to any population. For example, there could be a program for low-income White families, a program for fathers who have adolescent daughters, a program for mothers who have adolescent boys, a program for parents having only daughters in early childhood, and a program for non-White mothers with adolescent sons in a low-income household, etc. If family support programs are targeted specifically, the effectiveness of program could be improved.

Overall, this study suggests that early intervention for fathers, mothers and children to promote children's life satisfaction and self-mastery in emerging adulthood. Family support programs should include all of individuals and ecosystems in families to make positive effect for child development. In addition, the programs should be specified by a target population, considering race, household income, and gender.

Future Research Directions

This study provided a picture that how the factors of fathers, mothers, and children interacts each other and draw into the benefits of children's psychological well-being in family systems. At the same time, this study opens directions that what researchers need to study and examine in a family-related field.

First, it is necessary to demonstrate the differences in impacts from father involvement and mother involvement. This study suggested that the effect of father involvement and mother involvement could be different. For instance, father involvement may affect emerging adult children's self-mastery, as opposed to the fact that mother involvement does not affect it directly. This difference has been indicated by previous studies that a father and a mother give something unique influence on their children (Biller & Kimpton, 1997). Biller (1993) called this "the two-parent advantage" that children raised by two parents have more advantage in development than their counterparts. Yet, it is uncertain that what benefits from father involvement and mother involvement are different in terms of child development. This study focused only on two indicators of psychological well-being: life satisfaction and self-mastery. However, the differences of benefits could be revealed clearly in other aspects of development such as cognitive development, physical development,

and social development, Furthermore, it needs to be investigated that how those differences are made in family systems.

Second, the characteristics and effect of father/mother involvement in adolescence need to be examined more. The insignificant effect of father/mother involvement in adolescence in this study does not imply that father/mother involvement in adolescence are not important to contemporaneous and future psychological well-being. Rather, this study indicated that father/mother involvement in early childhood and those in adolescence could be different in several ways. In fact, the developmental tasks for young children and adolescents are dissimilar (Herbert, 2004). Steinberg (2001) argued that family relationships are changed especially during adolescence. Yet, father-adolescent relationships have not been focused in family-related research (Hosley & Montemayor, 1997). Therefore, it is important to understand what aspects of father involvement in adolescence bring out positive consequences in child development distinctively.

Third, the quality and quantity of father involvement need to be explored in more depth. In this study, the quality of father involvement was not examined more specifically, due to the limited items in the NSFH data sets. However, it has been known well that the quality of fathering is more important than quantity of fathering (e.g., Easterbrooks & Goldberg, 1984). Then, it is required to study the quality of father involvement distinctively from the quantity of father involvement. Additionally, it would be helpful to know how differently the quantity and the quality of father involvement benefit child development.

Fourth, it is necessary to discover various determinants influencing father involvement beyond mother involvement and interparental marital relationships. Lamb et al. (1987) proposed that there are four determinants: motivation, skills and confidence, social supports and stresses, and institutional factors. Flouri (2004b) also argued that father involvement is affected by mainly contextual factors, father's characteristics, mother's characteristics and child characteristics. Among these, economic situation or job-related stress is associated with the level of father involvement (Elder et al., 1992). This study also suggested potential influence of financial context on father involvement by the effect of household income on father involvement. Yeung et al. (2001) also found that fathers' salary and work hours negatively affect time spent with their children. Another possible factor is the transgenerational influences; how grandfathers were involved with fathers could affect current fathering; and the current fathering would affect the future father involvement of children; consequently these fathering would be resulted in grandchildren's development. If

child development is a consequence of these generational fathering, we may need to consider how fathers or grandfathers take care of their children.

Fifth, future research needs to address the influences of race, household income, and gender on father/mother involvement and children's psychological well-being more in depth. For example, a multi-group analysis could be conducted for boys and girls. This study showed that gender affected child outcomes. In that case, the next approach will be a multi-group analysis to determine how the relationship between fathering/mothering and children's developmental outcomes would be differentiated for boys and girls. This multi-group analysis will show specific differences in White/non-White groups or low/medium/high household income groups. These kinds of further studies will be helpful to understand the role of children's attributes in family systems and children's psychological well-being.

Sixth, different target populations of fathers such as nonresident fathers or stepfathers need to be explored regarding the association between father involvement and their children's psychological well-being. In particular, the characteristics of nonresident fathers' involvement are different from those of resident fathers' involvement. For example, father's financial support for children, feeling of closeness, and the frequency of visit have been popular factors for nonresident fathers' involvement (Amato & Gilbreth, 1999). The consequences as well as these characteristics of nonresident fathers' involvement could be different from those of resident fathers focused in this study. It is well known that children in divorced families or single-mother families are more vulnerable in their well-being than their counterparts (Aquilino, 1996; Cherlin, Kiernan, & Chase-Lansdale, 1995). Furthermore, father-child relationships between stepfathers and stepchildren could be different from biological father-child relationships. They are more likely to be distant to each other than biological counterpart group (Amato & Sobolewski, 2004). Still, it is possible that the psychological well-being of children having stepfathers would be revealed as same as that of children having resident biological fathers, if stepfathers are involved with the children in an appropriate level. Therefore, it is vital to focus on different target population of nonresident fathers or stepfathers. It will be helpful to understand various family structures and the effect on children's psychological well-being.

Conclusions

The purpose of this study was to demonstrate the impact of father involvement on positive psychological well-being of children in a whole picture of family systems. For this

purpose, this study utilized only two-parent households in that parents have maintained their marital relationships. Also, this study examined children's psychological well-being in a longitudinal viewpoint, which is critical in family studies (Radin, 1994). Particularly, this study focused on children's psychological well-being in emerging adulthood, which is a unique developmental phase from others (Arnett, 2000, 2006). This study considered the contexts of mother involvement, interparental marital relationship, and children's attributes affecting father involvement and children's psychological well-being. Multiple informants' data were analyzed, which improve the validity of the results (Marsiglio et al., 2000).

The results indicated that emerging adult children's life satisfaction was indirectly affected by early father/mother involvement and strongly influenced by parents' marital satisfaction in both early childhood and adolescence. In addition, interparental marital relationship and mother involvement significantly affected father involvement in both early childhood and adolescence. Particularly, parents' marital relationship in early childhood had various direct and indirect effects on father involvement, mother involvement, and children's psychological well-being. Furthermore, father/mother involvement and children's psychological well-being were differentiated by race, household income, and gender.

These results suggest that children's future psychological well-being is influenced by several factors as Ecological Systems Theory proposed: interactions between parents and children, children's attributes, and parents' marital relationships, which have long-lasting influence on children's psychological well-being. In particular, this study confirms that the significance of father involvement in children's lives. Additionally, it implies that to promote children's psychological well-being, interparental marital relationship and mother involvement as well as father involvement need to be improved. To maximize the impacts of these familial factors, various family support programs need to be developed and specified by race, household income, and gender.

This study encourages research about positive child developmental outcomes, not limited in negative child outcomes. How to promote healthy well-being of children is as important as how to prevent unhealthy problems. Therefore, it is important to find out the influences and contexts in families on children's well-being. It is hoped that this study motivates more developed and expanded research about the whole picture of the promotion of healthy children's well-being.

APPENDIX A

A Hypothesized Model and the Descriptions of the Observed Variables in the Model

Wave 1 (87-88; 5~12 yrs)

Wave 2 (92-93; 10~17 yrs)

Wave 3 (01-02; 19~26yrs)

The Descriptions of the Observed Variables in the Model

- X1: Quantity of mother involvement reported by mothers at Wave 1
- X2: Quality of mother involvement reported by mothers at Wave 1
- X3: Quantity of father involvement reported by fathers at Wave 1
- X4: Quality of father involvement reported by fathers at Wave 1
- X5: Global marital satisfaction reported by fathers at Wave 1
- X6: Global marital satisfaction reported by mothers at Wave 1
- X7: Quantity of mother involvement reported by mothers at Wave 2
- X8: Quality of mother involvement reported by mothers at Wave 2
- X9: Quantity of mother involvement reported by focal children at Wave 2
- X10: Quality of mother involvement reported by focal children at Wave 2
- X11: Quantity of father involvement reported by fathers at Wave 2
- X12: Quality of father involvement reported by fathers at Wave 2
- X13: Quantity of father involvement reported by focal children at Wave 2
- X14: Quality of father involvement reported by focal children at Wave 2
- X15: Marital satisfaction reported by fathers at Wave 2
- X16: Marital satisfaction reported by mothers at Wave 2
- LS: Life satisfaction reported by focal children at Wave 3
- SE: Self-mastery reported by focal children at Wave 3

APPENDIX B

The Items and Scales for the Variables of Interest

Father/ Mother Involvement

Wave 1 Reported by Fathers/ Mothers

Items		Scale
Quantity	1) How often do you spend time with the children in leisure activities away from home (picnics, movies, sports, etc.)? (E1002A/S103A) ² 2) How often do you spend time with the children at home working on a project or playing together? (E1002B/S103B) 3) How often do you spend time with the children having private talks? (E1002C/S103C) 4) How often do you spend time with the children helping with reading or homework? (E1002D/S103D) 5) During the past 30 days, how often did you have an especially enjoyable time with focal child? (M284/S98)	1 – Never or rarely 2 – Once a month or less 3 – Several times a month 4 – About once a week 5 – Several times a week 6 – Almost everyday
	Listed below are several ways that parents behave with their children. Please indicate how often you do each. 6) praise child? (E1003A/S104A) 7) allow child to help set rules? (E1003B/S104B) 8) hug child? (E1003D/S104C)	1 – Never 2 – Seldom 3 – Sometimes 4 – Very often
Quality	9) How would you describe your relationship with the (focal) child? (E12/S94)	1 – Very poor 2 3 4 5 6 7 – Excellent

² The codes in parentheses are variable names for the items used in the NSFH codebooks. The first codes indicate the primary respondents' reports and the second ones the secondary respondents'.

Father/ Mother Involvement

Wave 2 Reported by Fathers/Mothers

Items		Scale
Quantity	1) In a typical school week, how many days do you check on whether (focal child) did (his/her) homework or other school assignments? (ML39) ³	0 – Never 1 2
	2) In a typical school week, how many days do you help (focal child) with (his/her) homework or other school assignments? (ML40)	3 4 5
	3) In a typical school week, how many days do you talk with (focal child) about school activities or events? (ML41)	6 7 – 7days
	4) In a typical school week, how many days do you talk with (focal child) about things (he/she) has learned in school? (ML42)	
Quantity	5) <i>Last week</i> , about how many hours did you spend time with (focal child), just the two of you, for example, working on homework or a project, in leisure activities, or just having private talks? (ML18)	1 – 0 ~ 5 hours 2 – 6 ~ 10 hours 3 – 11 ~ 15 hours 4 – 16 ~ 20 hours 5 – 21 hours or more
	6) During the <i>last week</i> , about how many times have you given (focal child) a hug or kiss to express your affection? (ML 26)	1 – 0 ~ 5 times 2 – 6 ~ 10 times 3 – 11 ~ 15 times 4 – 16 ~ 20 times 5 – 21 times or more
	7) During the <i>last 30 days</i> , how often did you and (focal child) talk about something that was worrying (him/her)? (ML23)	1 – Never 2 – Once 3 – Two or three times
Quantity	8) During the last 30 days how often did you and (focal child) talk about something that (he/she) was excited about or interested in? (ML24)	4 – About once a week 5 – Several times a week 6 – Almost every day
Quality	9) Taking all things together, on a scale from 0 to 10, where 0 is really bad and 10 is absolutely perfect, how would you describe your relationship with (focal child)? (ML87)	0 – really bad 1 2 3 4 5 6 7 8 9 10 – Absolutely perfect

³ At Wave 2, the same variable names were used for both the primary and the secondary respondents, who were differentiated by the variable of respondent type.

Father/ Mother Involvement

Wave 2 Reported by Focal Children

Items		Scale
Quantity	1) <i>Last week</i> , how many hours did you spend time with your father/mother just the two of you, for example, working on homework or a project, in leisure activities away from home, or just having private talks? (FY84/FY82)	1 – 0 ~ 5 hours 2 – 6 ~ 10 hours 3 – 11 ~ 15 hours 4 – 16 ~ 20 hours 5 – 21 hours or more
	2) How often does your father/mother praise you or give you a compliment? (FY96/FY94)	1 – Never 2 – Less than once a week 3 – About once a week 4 – Several times a week 5 – Almost every day
Quality	3) If you felt depressed or unhappy, how likely would you be to talk to your father/mother? Would you say you: (FY101/FY99) ⁴ 4) If you had a major decision to make, how likely would you be to talk to your father/mother? Would you say: (FY102/FY100)	1 – Definitely wouldn't 2 – Probably wouldn't 3 – About a 50-50 change 4 – Probably would 5 – Definitely would talk to father/mother
	5) How much do you admire your father/mother? On a scale from 0 to 10, where 0 is no admiration at all, and 10 is a tremendous amount, how much do you admire him? (FY120/FY119)	0 – No admiration at all 1 2 3 4 5 6 7 8 9 10 – A tremendous amount
	6) Taking all things together, on a scale from 0 to 10, where 0 is really bad and 10 is absolutely perfect, how would you describe your relationship with father/mother? (FY122/FY121)	0 – really bad 1 2 3 4 5 6 7 8 9 10 – Absolutely perfect

⁴ The first code indicates the question about fathers and the second one about mothers.

Interparental Marital Relationship

Wave 1 Reported by Fathers and Mothers

Items	Scale
1) Taking things all together, on a scale from 1 to 7, where 1 is very unhappy and 7 is very happy, how would you describe your marriage? (E701/S67)	1 – Very unhappy 2 3 4 5 6 7 – Very happy

Wave 2 Reported by Fathers and Mothers

Items	Scale
How happy are you with each of the following aspects of your marriage? 1) The understanding you receive from your spouse (MT602A) 2) The love and affection you get from your spouse (MT602B) 3) The amount of time you spend with your spouse (MT602C) 4) The demands your spouse places on you (MT602D) 5) Your sexual relationship (MT602E) 6) The way your spouse spends money (MT602F) 7) The work your spouse does around the house (MT602G) 8) Your spouse as a parent (MT602H)	1 – Very unhappy 2 3 4 5 6 7 – Very happy

Children's Psychological Well-being

Wave 3

Items	Scale
<p>Tell me <u>how satisfied you are</u> with each of the following things. Give me a number from 0 to 10, where 0 means extremely dissatisfied, and 10 means extremely satisfied.</p> <p>1) How satisfied are you with what you have achieved in school? (KO345)</p> <p>2) How satisfied are you with your prospects for career advancement in the future? (KO346)</p> <p>3) How satisfied are you with your financial situation? (KO347)</p> <p>4) How satisfied are you with your leisure time? (KO348)</p> <p>5) How satisfied are you with your friendships? (KO349)</p> <p>6) How satisfied are you with your health? (KO350)</p> <p>7) How satisfied are you with your love life? (KO351)</p> <p>8) How satisfied are you with your physical appearance? (KO352)</p>	<p>0 – Extremely dissatisfied</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10 – Extremely satisfied</p>
<p>Tell me whether you strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree, with each of the following statements about yourself.</p> <p>9) There is really no way I can solve some of the problems I have. (KO368)</p> <p>10) Sometimes I feel that I'm being pushed around in life. (KO369)</p> <p>11) I can do just about anything I really set my mind to do. (KO370)</p> <p>12) I have little control over the things that happen to me. (KO371)</p> <p>13) I feel hopeful about the future. (KO372)</p>	<p>1 – Strongly disagree</p> <p>2 – Disagree</p> <p>3 – Neither agree nor disagree</p> <p>4 – Agree</p> <p>5 – Strongly agree</p>

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BIOGRAPHICAL SKETCH

EDUCATION

Ph.D., Family and Child Sciences, April 2007

Department of Family and Child Sciences, Florida State University, Tallahassee, FL

Major area: Family Relations

Major Advisor: Thomas Cornille (Committee: Kay Pasley, Ann Mullis, Gary Peterson)

Dissertation Topic: *The long-term influence of father involvement on emerging adults' psychological well-being*

M.Ed., Educational Counseling, August 1998

Department of Education, Seoul National University, Seoul, South Korea

Master's thesis: *A study of developing Career Exploration Behavior Checklist for undergraduate students*

Major Advisor: Kay-Hyun Kim (Committee: Sung-Jin Lee, Sung-Soo Park)

B.A., Educational Psychology, February 1995

College of Education, Ewha Womans University, Seoul, South Korea

Minor area: English Education

AWARDS AND HONORS

The May Watson Connor Scholarship, April 2006

Department of Family and Child Sciences, College of Human Sciences

Florida State University, Tallahassee, FL

Kappa Omicron Nu, April 2006

A member of Omicron Pi Chapter, Florida State University

RESEARCH EXPERIENCE

Research Assistant, Fall 2004 – Summer 2006

Expansion and Evaluation of an Online Master of Social Work Curriculum

College of Social Work, Florida State University

3-year grant for the Improvement of Post Secondary Education funded by US

Department of Education (Principal investigator – D. J. Wilke, Ph.D.)

- Managed data coding and analysis with a large data set.
- Coordinated tasks to develop the scanning program.
- Updated literature review.
- Managed an annual plan to assist the investigators to run the project.
- Develop and create a manuscript to utilize the cumulative large data set.

Research Assistant, Fall 2003

Female Juvenile Offenders Project

Family Institute, Department of Family and Child Sciences, Florida State University

Using a developmental-ecological framework to advance understanding of the unique needs of female juvenile offenders (Supervisors – R. L. Mullis, Ph.D., and T. A. Cornille, Ph.D.)

- Updated literature reviews.

Research Assistant, Fall 1999 – Summer 2000

Counseling for Youth in Cyber Space Project

Department of Neuropsychiatry, College of medicine, Ewha Womans University

A study of integrated system construction for sex counseling and developing a standard psychological test for youth in cyber space (Principal Investigator – G. H. Lee, M.D.)

- Reviewed relevant literatures.
- Developed and organized a sex counseling website for youth.
- Created items, information, and programs regarding healthy sexual development on the Internet website for youths.
- Conducted individual mental health counseling on sexual problems through the website via email, bulletin boards, and chat rooms.
- Administrated the sex counseling website for youth.
- Collected and analyzed data produced from the website.
- Planned and led workshops for the associated personnel in order to run the project effectively.
- Completed a second year's report of the project.

PUBLICATIONS

Park, T., Cho, S., & Seo, J. (2006). A qualitative analysis by the grounded theory method: A compulsive buying case, *Contemporary Family Therapy*, 28, 239-249.

Seo, J., Donovan, P. D., Dunn, J. W., & Greene, K. H. (in revision). A meta-analysis of emotionally focused couple therapy, *Contemporary Family Therapy*.

Im, E., Park, S., Kim, J., & Seo, J. (1998). The exploration of the potential usage of online counseling, *Daejin Education Bulletin*, 1, 37-59.

Seo, J. (1994). The Review of Client-Centered Psychology, *Ewha Psychological Review*, 31, 28-35.

Seo, J. (1993). The conflicts between parents and female university students, *Ewha Psychological Review*, 30, 67-76.

PRESENTATIONS

Seo, J., & Cornille, T. A. (2006, October). MFT training research through a program evaluation lens. Poster presented at the Annual Conference of the American Association for Marriage and Family Therapy, Austin, Texas.

Park, T., Cho, S., & Seo, J. (2006, May). A qualitative analysis by the grounded theory method: A compulsive buying case. Poster presented at the Second International Congress of Qualitative Inquiry, University of Illinois.

Seo, J., Donovan, P. D., Dunn, J. W., & Greene, K. H. (2005, February). A meta-analysis of emotionally focused couple therapy. Workshop presented at the Student Research and Creativity Day, College of Human Sciences, Florida State University.

Seo, J. (2004, May). Meeting the challenge of serving international students in America. Symposium presented at the Southern College Health Association Annual conference, Florida State University.

TEACHING EXPERIENCE

Guest Lecturer, Fall 2006

Department of Sociology, Pennsylvania State University, University Park, PA

- *Family-centered culture in Asia* (SOC 30 : Sociology of Family)

Guest Lecturer, Spring 2003

Department of Family and Child Sciences, Florida State University, Tallahassee, FL

- *The characteristics of Korean families* (FAD 2230: Family Relationship)

Instructor, Fall 1999

Hallim University, Chuncheon, South Korea

- *The search for the self*

Lecturer, December 1997

The Center for Sexual Abuse Counseling, Seoul, South Korea

- *How to counsel through PC network*

Lecturer, January - October 1997

Love Line Welfare Foundation, Seoul, South Korea.

- *The application of MBTI for prospective volunteer counselors*
- *The application of MBTI for telemarketers*
- *The education of prospective volunteer counselors through PC network*
- *The effective study methods for middle school students*

Teaching Internship, Spring 1994

Namhyun Middle School, Seoul, South Korea

- *8th Grade English*

PROFESSIONAL EXPERIENCE

Marriage and Family Therapy Practicum, Spring 2004 – Fall 2002

The Center for Marriage and Family Therapy, Florida State University

- Provided individual therapy for the clients with depression, suicidal risk, sexual abuse problems, etc.
- Provided couple therapy for the clients with separation, pre-/post-divorce, affair, abuse, premarital problems, etc.
- Provided family therapy for the clients with abuse and parent-child relationship problems.
- Supervisor: Mary Hicks, Ph.D., and Steve Mills, Ph.D.

Group Counselor, December 1998 – January 2001

The Family Center of Samsung Corporation, Seoul, South Korea

- Performed weekly group counseling for middle school students under the topic of “The Effective Study Methods” in order to improve their study skills.
- Supervisor: Jung-ee Yu, Ed.D.

Counselor, Fall 1998

Korea Youth Counseling Institute, Seoul, South Korea

- Conducted individual mental health counseling on sexual, career, and psychosocial issues through the Internet via email and chat rooms (target group: 7-25 years old).
- Supervisor: Eunmi Lim, Ed.D.

Counselor, Spring 1998

Love Line Welfare Foundation, Seoul, South Korea

- Conducted individual mental health counseling on sexual, career, and psychosocial issues through PC network via email, bulletin boards, and chat rooms (target group: 7-25 years old).
- Supervisor: Sun-Kyung Kim, Ed.D.

Manager and Counselor, January 1997 – December 1997

The Division of Counseling through PC Network

Love Line Welfare Foundation, Seoul, South Korea

- Conducted individual mental health counseling on sexual, career, and psychosocial issues through PC network via email, bulletin boards, and chatting(main age group: 7-25).
- Administrated the PC network programs including an online counselor education program; created new programs and events in order to encourage the users to enter the PC network.
- Directed psychodramas for prospective volunteer counselors, staffs, and elderly people who were the members of the welfare foundation.
- Directed group counseling for runaway female juveniles by the request of a middle school.

Counseling Practicum, Spring 1995 – Fall 1997

The Student Counseling Center, Seoul National University

- Conducted intake counseling; administrated and interpreted MMPI, MBTI, Intelligence and Aptitude Tests
- Assisted group counseling sessions on communication skills and premarital counseling

- Supervisor: Kay-Hyun Kim, Ph.D.

Test Administrator, January 1996

The Family Center of Samsung Corporation, Seoul, South Korea

- Administred and interpreted Intelligence Tests for elementary school students
- Supervisor: Jung-ee Yu, Ed.D.

Counselor, Fall 1995

Love Line Welfare Foundation, Seoul, South Korea

- Conducted individual mental health counseling with at-risk clients by phone
- Supervisor: Kay-Hyun Kim, Ph.D.

PROFESSIONAL DEVELOPMENT

MBTI Training Workshop for Professionals, January 1998

The Korean Academy of Psychological Type, Seoul, Korea.

MBTI of Children and Adolescents Training Workshop, June 1996

The Korean Academy of Psychological Type, Seoul, Korea.

Psychodrama Directorship Training, July 1995

The Kangnam Counseling and Psychotherapy Center, Seoul Korea.

The Solution Focused Therapy Workshop, July 1995

The Korean Academy of Family Therapy.

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

National Council of Family Relations (NCFR)

American Association of Marriage and Family Therapy (AAMFT)

Korean Association of Counseling and Psychotherapy (KACP)

Korean Association of Counseling Education (KACE)

Korean Academy of Psychological Type (KAPT)