The Impact of Parentification on Depression Moderated by Self-Care: A Multiple Group Analysis by Gender for South Korea and the U.S.

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The Impact of Parentification on Depression Moderated by Self-Care:

A Multiple Group Analysis by Gender

for South Korea and the U.S.

Sunnie Giles

A dissertation submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of

Doctor of Philosophy

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ABSTRACT

The Impact of Parentification on Depression Moderated by Self-Care:
A Multiple Group Analysis by Gender
for South Korea and the U.S.

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Doctor of Philosophy

Parentification, the process of role reversal between parent and child, has long-term deleterious consequences. Using 500 men and 501 women, ranging from 18 years to 55 years old, residing in Korea and the U.S., this study examined the relationship of parentification experienced during childhood and depression in adulthood. The moderating impact of gender and self-care was examined in both the Korean and U.S. samples. Multiple-group analysis showed that the relationship between parentification and depression was statistically significant in all groups (U.S., Korean, male, and female), and self-care was negatively linked to depression. However, self-care did not moderate the relationship between parentification and depression in any of the groups.

Further analysis using mixture modeling revealed that there were two distinct classes. The majority class, comprising 94.4% of the sample, contained the individuals who practiced more self-care and were more depressed than those in the other class and showed a significant moderation effect of self-care in the association between parentification and depression in the expected direction. However, the minority class, comprising 5.6% of the sample, contained the individuals who practiced less self-care and were less depressed than those in the majority class and showed a significant moderation effect of self-care in the opposite direction with much greater effect sizes enough to negate the moderation effect from the majority class. In other words, self-care appeared to worsen the relationship between parentification and depression for those in the minority class. Implications for therapy are discussed.

Key words: depression, parentification, self-care, Korea, Korean, moderation, cross-cultural, individualistic, collectivistic
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Depression is an important topic to understand because it extracts a significant cost to society. It results in lost work productivity and increased medical expenses and the costs in the U.S. are estimated to be $83 billion per year (Greenberg et al., 2003). Smith and Smith (2010) concluded that the lifetime loss of income for a family with a depressed member is around $300,000. Children and adolescents who suffered depression have, as adults, 30% - 37% lower incomes and 31% lower levels of educational attainment (Smith & Smith, 2010).

Numerous factors have been shown to be related to depression, including (1) biological influences and genetics (Bornstein, Schuppenies, Wong, & Licinio, 2006; Duke, Begue, Bell, & Eisenlohr, 2013); (2) individual characteristics such as self-esteem (Sowislo & Orth, 2013), physical health (Berkman et al., 1986), personality (Klein, Kotov & Bufferd, 2011), coping style (Johnson, Galambos, & Krahn, 2014), and emotional regulation (Alcalar, Ozkan, Kucucuk, Aslay, & Ozkan, 2012; Nolen-Hoeksema & Aldao, 2011); (3) environmental factors such as stress (Chan, Doan, & Thompson, 2013), interpersonal relationships including marital and family processes (Beach & Whisman, 2012; Marchand, 2004), and work factors (Bonde, 2008); and (4) demographic factors such as education (Scarinci et al., 2002), gender (Bongers, Koot, van der Ende, & Verhulst, 2004; Diamantopoulou, Verhulst, & van der Ende, 2011), number of children (McLanahan & Adams, 1987), and marital status (Kessler & Essex, 1982).

One of the variables influencing depression could be parentification, a relatively under-researched topic. Previous research has established that the seemingly innocuous social phenomenon of parentification has many deleterious effects long into adulthood (Earley & Cushway, 2002; Giles, Harper, Bean & Sandberg, in review; Jurkovic, 1998). However, relatively limited empirical research has focused on the long-term effects of parentification. Parentification inevitably sets the child up for failure in performing duties and responsibilities
appropriate for an adult, and in such circumstances, children internalize the failure as shameful reflection of self (DiCaccavo, 2006). Given the definition of depression as a protest against a fragmentation of self-esteem (Miller, 1997), a logical connection can be made that parentification could lead to depression. Indeed, a few studies have established an association between parentification in childhood and depression in adolescence (Willert, 2003) and young adulthood (Williams & Francis, 2010).

There could be groups of people who are more susceptible to parentification. It is likely that parentification would be more prevalent and accepted in the Far Eastern culture where filial piety is a revered value and collectivism that encourages individual sacrifices for group goals is more dominant (Hwang, 1999) than in Western culture where individuation from family-of-origin is valued (Choi, 2002). Socialized expectations may also lead women to emotionally and physically care-take other family members and become parentified more than men. Therefore, it is important to understand parentification in the cultural context and across gender. However, no study, to date, has examined how gender and culture are related to the relationship of parentification and depression. The current study expands the context of depression research by examining a family process (parentification) and demographic factors (gender and country of residence) that may be related to depression.

The role of self-care in relationship to depression has been another relatively under-researched topic. In literature, self-care has been synonymously used with the strategies people use to recover from mental illness and substance dependence (Deegan, 1993; Jacobson & Greenley, 2001; Onken, Craig, Ridgway, Ralph, & Cook, 2007). One of important goals of this study was to examine how one can overcome the negative effects of parentification resulting in depression in adulthood by practicing concrete measures based on self-care. To be more specific,
this study examined how parentification in childhood is related to adult depression and how self-care may moderate the relationship between childhood parentification and depression in adulthood. Previous research on the association between parentification in childhood and depression in young adulthood (Jacobvitz & Bush, 1996; Williams & Francis, 2010) has not examined how gender and self-care may moderate the relationships between parentification and depression; neither have differences in ethnicity (Asian & Caucasian) been investigated. This study makes its contribution by examining parentification and depression in adults representing the general population, not adolescents or college students only and by identifying the moderating effect of self-care, gender, and culture (South Korea and the U.S.). It also expands the existing body of literature by formulating a theoretical framework of self-care.

In the following review of literature, the importance of two contrasting views for examining cultural influences will first be examined, and studies that have compared family or psychological variables among Koreans and Caucasian Americans will be reviewed. Next, parentification will be examined by exploring its theoretical foundations, outcomes related to parentification, gender and parentification, and then parentification studies that included a South Korean sample. Then, depression will be explored by identifying general theories of depression, the specific theory used in this study, reviewing risk factors for depression including parentification, reviewing studies of gender and depression, and studies of depression using South Korean samples. Finally, the potential role of self-care as a possible buffer of the relationship between parentification and depression will be examined by reviewing conceptual models of self-care and studies relating self-care and depression.
Literature Review

Cultural Comparison

In terms of examining cultural considerations, there are two major contrasting views on how to approach cross-cultural psychology: etic and emic (Berry, 1989; Miller et al., 2013). The “etic” approach suggests that similar family processes and comparable behaviors are found across cultures, and the “emic” approach suggests that cultural values substantially influence family processes. These two terms were coined by Pike more than 50 years ago (Pike, 1954). This dual-lens approach suggests we need to interpret any data on family processes within specific cultural context (Pike, 1982) because cultural patterns have been shown to predict behavior (Wheeler, Reis, & Bond, 1989). Supporting this argument, in a study of 1,614 students from 10 different cultures, researchers (Triandis et al., 1993) concluded that the most complete picture is obtained when both etics and emics are examined at the same time.

The very few existing cross-cultural studies between the U.S. and Korea seem to support this approach to cultural examination as well. Supporting the etic approach, in an international cultural and gender comparison study of 559 participants in Korea, Russia, Turkey and the U.S., researchers (Chirkov, Ryan, Kim, & Kaplan, 2003) found that the relative autonomy of individuals’ cultural practices predicted well-being across cultures and gender. In support of the emic approach, in a study of samples from Korea, China and the U.S., Kim, Pan, and Park (1998) found that people in China and Korea (collectivistic societies) were more socially oriented, tended to avoid confrontation, and exhibited more trouble adjusting to new situations than their counterparts in the U.S. (an individualistic society). Supporting the combined etic and emic approach, researchers (Jung & Lee, 2006) found in another study of 201 female college students in Korea and 205 female college students in the U.S. that, regardless of cultural backgrounds,
women who place cognitive importance on appearance may develop negative images of their bodies. They concluded that Korean women in a collectivistic society placed higher cognitive importance on appearance than U.S. women in an individualistic society. Because no cross-cultural studies comparing family process variables among Koreans living in South Korea and Caucasians living in the U.S. could be found, this study of parentification and depression is the first of its kind in comparing a family process variable across Korean and U.S. cultures. The next section sets the theoretical foundation for parentification and reviews the few studies that have compared parentification among U.S. and Korean adolescents.

**Depression**

**Theoretical foundations for depression.** Over the last several decades, many scholars have formulated different theories to explain depression including the diathesis stress model originated by Meehl (1962), cognitive theory of depression by Beck (1967), learned helpless model by Seligman (1975), biopsychosocial model first developed by Engel (1977), attributional model by Abramson, Seligman, and Teasdale (1978), social conflict model by Brown and Harris (1978), marital discord model of depression by Beach, Sandeen, & O’Leary (1990) and the stress-generated model by Hammen (1991). According to Meehl’s diathesis stress model, the onset of depression requires environmental stressors which interact with a genetic predisposition to depression (1962). Meehl’s theory emphasized the importance of the dynamic interaction between the environmental factors and genetic materials where both the environment and genetics are necessary but not sufficient conditions for the other to develop a disorder (Ingram & Luxton, 2005). The diathesis-stress model has received such support in recent years that most modern models of depression include vulnerability and stress to explain depression (Ingram & Luxton, 2005).
Building on Meehl’s idea of the impact of the environment on depression, Beck formulated a model built on the idea that there is a reciprocal relationship between the environment and a tendency for negative, distorted cognitions of self, the world, and the future. Beck believed these distorted cognitions were conditioned and reinforced by negative and stressful social interactions within a person’s environment (1967).

Then, Seligman proposed a learned helpless model of depression (1975), which was first observed in animals’ classical conditioning. He noted that dogs that first received shocks could neither avoid nor escape a shuttle box even though the barriers are low enough (Seligman & Maier, 1967). This model had two major problems: (1) it did not distinguish between universal and personal helplessness where outcomes are uncontrollable for all people and for only certain people; and (2) it did not explain when helplessness was specific vs. general and when it was chronic vs. acute (Abramson et al., 1978).

Hence, this model was reformulated as the attributional model, which suggested that perceived inability to control events is the source of depression (Abramson et al., 1978). According to Abramson et al. (1978), the attributions for locus of control (external vs. internal) and how general or specific the bad event is, along with whether the event is stable or temporary, are related to depression. When a person perceives that he/ she has no internal control of the event and that the event is more specific to them and more stable over a long period of time, depression is more likely to develop.

Combining this idea with Meehl’s original idea of diathesis stress concept, Engel (1977) developed the biopsychosocial model of depression, elevating these models to a three-dimensional concept. He argued that biological, psychological, and social factors and their complex interactions need to be considered together to understand depression. The core of
Engel’s model consists of the concept of psychobiological vulnerability, which is determined by biogenetic, psychological, somatic, and societal risk factors and triggers severe or chronic distress that affects the individual's resilience and leads to symptoms of depression when idiosyncratic, stress-inducing life events interact with this vulnerability in a circular, negative downward loop (Schotte, Van Den Bossche, De Doncker, Claes, & Cosyns, 2006).

The social conflict model proposed by Brown and Harris (1978) hones in on the interaction between psychological and social factors, suggesting a circular causation between negative self appraisal and social feedback in depression. According to their theory, depression can have an adverse effect on the social capacity, resulting in social rejection, which in turn confirms their belief that they are unworthy.

This concept of circular causation was cemented in Hammen’s model (1991), which denotes a closed feedback loop between life stressors and depression. By studying 60 women over a one-year period, Hammen (1991) found women with unipolar depression were exposed to more stress and reported significantly higher interpersonal stress than others, about which he concluded that depressed women’s symptoms, behaviors, characteristics, and social context generated stressful interpersonal conditions that had the potential for contributing to the depressive symptoms and stress that created depression.

Applying this concept of circular causation with the environment to relationships, Coyne (1976) developed the interpersonal theory of depression [IPT]. Coyne’s theory suggested a self-fulfilling prophecy where the interpersonal behaviors and beliefs of depressed people produce rejection from others, which feeds their depression in a circular pattern. IPT typically focuses on four problem areas that are inter-related: grief over loss, interpersonal disputes (persistent
conflicts with significant others), role transitions (changes in a person's occupational or social/family situations), and interpersonal skill deficits (Nathan & Gorman, 2002).

Some scholars (Beach & Whisman, 2012; Beach et al., 1990) honed in on this social interaction factor in depression in the context of marriage by suggesting a marital discord model of depression, which was built on attachment theory and the diathesis stress model. In this model, negative marital interaction creates stress and hinders coping, which triggers the development of depression. In a comprehensive review of affective disorders, Beach and Whisman (2012) suggested that marital discord is one of the most severe life stressors and predicts depression cross-sectionally and longitudinally, especially for women.

**Specific theory for current study.** Building on the concept of reciprocal determinism between the environment and the person of the diathesis stress model (Hammen, 1991; Meehl, 1962), Miller (1997) developed her theoretical model of depression, which has main roots in the attributional model (Abramson et al., 1978) and social conflict theory of depression (Brown & Harris, 1978). She asserted that people are free from depression when self-esteem is based on the authenticity of their own feelings about their inherent self rather than being based on others’ approval for the possession of certain qualities or successful performances. If a person’s self-esteem is based on others’ approval of successful achievements, the self-esteem is fleeting and only as good as the last performance. In a study of 33,224 adults in 18 cultural regions representing both collectivistic and individualist societies, researchers found that external locus of control is associated with depression across all cultures (Cheng, Cheung, Chio, & Chan, 2013). If self-esteem is contingent on external factors, one is more susceptible to depression, which is a concept that is at the core of the attribution model (Abramson et al., 1978). Therefore, self-esteem based on others’ approval of one’s performance leads to and is reinforced by negative
appraisal of self in a circular causality, which idea has roots in the social conflict theory (Brown & Harris, 1978).

A solid sense of self can buffer the stress from the harsh demands of life, rendering one more resilient and less susceptible to depression (Arndt & Goldenberg, 2002). Parentification typically leads to a loss of self that results from the imbalance between the responsibilities of taking care of others and the benefits of one’s membership in the family as well as the imbalance between tending to the needs of others and self-care. This sense of loss of self may be exacerbated by low utilization of alternative social support, contact with others, leisure activities and outlets for creativity. In a circular causal loop, parentification is then related to loss of contact, and activities which lead to loss of self, which, in turn, leads to less contact and social activity. Supporting this idea, Wolkin (1984) studied 368 college-age adults found that an impaired sense of individuation, self and autonomy among parentified children was linked with depression.

In terms of the dominant force in the reciprocal determinism between diathesis and stress in the context of self-esteem and depression, it seems that the effect of self-esteem on depression is greater than that of depression on self-esteem. A meta-study of the vulnerability (diathesis) and scar (stress) models of low self-esteem and depression has revealed that the effect of self-esteem on depression was significantly higher than the effect of depression on self-esteem (Sowislo & Orth, 2013). Consistent with Sowislo and Orth’ findings, Skaff and Pearlin (1992) studied 527 caregivers for patients with Alzheimer’s disease and found that low self esteem was significantly related to depression. Taken together, the above studies support the argument that parentification leads to low self-esteem that continues into adulthood and is associated with depression.
Another source of depression related to parentification could be feelings of unworthiness of attachment. Klein (1975) theorized that depression arises from failed attempts to preserve attachment, at which point the failure can be internalized as being unworthy. Children ascribe omnipotent qualities to their parents with their innate proclivity to believe in the magical covenant where they expect the parent to miraculously relieve distress and provide comfort (Lee & Martin, 2013). They do so perhaps to maximize their chances of securing attachment from their parents, which they view as vital to their survival, no less important than feeding (Bowlby, 1988). When children are unable to depend on their parents and experience them as emotionally unavailable, as is invariably the case for parentified children, they internalize an unworthiness in which they believe their parents do not meet their needs because something about them as children is unlovable and unworthy (Jurkovic, 1997). Supporting Klein’s psychodynamic view on attachment unworthiness as a source of depression, Margolese and colleagues found in a longitudinal study of 134 adolescents that insecurely-attached adolescents' tendency to make negative attributions in themselves in response to stresses fully mediated the attachment–depression association (Margolese, Markiewicz, & Doyle, 2005), which highlights the link between attachment, negative attributions, and depression.

To cope with the painful sense of unworthiness for attachment, parentified individuals may develop a false, more acceptable self, which some researchers noticed among parentified children and gave it the name the “imposter phenomenon” (Harper & Hoopes, 1990). The imposter phenomenon refers to the internal experience where parentified children feel fraudulent and unworthy despite objective evidence of success in the form of academic or professional achievements (Clance, 1985). Substantiating this finding, Castro, Jones, and Mirmalimi (2004) studied 213 graduate students and found that those parentified as children performed tasks that
were developmentally too advanced. They adapted themselves to meet the needs of their parents and developed a schema of self as inauthentic. This led to them frequently viewing themselves as “impersoners” who feared their true identity would be revealed to others. The development of this inauthentic self is perhaps to cover the failure to perform duties and responsibilities appropriate for adults, which the child potentially interprets as a precursor to parental rejection and disapproval. The child perceives their primary caretakers’ rejection or disapproval as a threat to their survival (Johnson, 2004), which necessitates a development of a fraudulent self that is more worthy of parental approval and love. In a study of 360 university students, parentification was associated with narcissistic personality disorder (Jones & Wells, 1996), a consummate ascription of a fraudulent self.

Adults who were parentified as children have likely failed to find secure attachment with their parents and had to sacrifice their own needs to physically and emotionally care for a parent, which may confirm parentified children’s feelings of unworthiness over time (Miller, 2008). For the purpose of the current study, Miller’s explanation of depression as a response to the false self and its perpetuation will be adopted.

**Risk factors for adult depression.** As reviewed above, parentification is a risk factor for adult depression. Parentification is linked with stress and coping style and emotion regulation (Shipman, Zeman, Fitzgerald, & Swisher, 2003), personality (Jones & Wells, 1996), self-esteem (Wells, Glickauf-Hughes, & Jones, 1999), problems with interpersonal relationships (Martin, 1996), and low socioeconomic status (Leonard, 2013), all of which are predictors of depression. Broad categories of predictors of depression in adults include 1) biological predictors including but not limited to genetics (Bornstein et al., 2006), 2) individual factors which would include a) personality (Klein et al., 2011), b) stress and coping style and emotion regulation (Alcalar et al.,
2012; Nolen-Hoeksema & Aldao, 2011), c) physical health (Berkman et al., 1986; Slavich & Irwin, 2014), and d) self-esteem (Sowislo & Orth, 2013). 3) interpersonal relationships which include a) marital relationship (Marchand, 2004; Beach, Katz, Kim, & Brody, 2003), b) family relationships including family-of-origin issues (Bifulco, Moran, Baines, Bunn, & Stanford, 2002), c) other social support network (Teo, Choi, & Valentine, 2013), and d) social support at work (Park, Wilson, & Lee, 2004); and 4) environmental and socioeconomic influences such as stress (Chan et al., 2013), financial strain (Zimmerman & Katon, 2005), and 4) demographic factors such as education (Scarinci et al., 2002), number of children (McLanahan & Adams, 1987) and marital status (Kessler & Essex, 1982).

From the biopsychological point of view, researchers found in a study of 172 twin pairs that depression is linked with a common set of genes that influence anxiety and depressive symptoms (Thapar & McGuffin, 1997). Others found a higher level of depressive symptoms among those whose family members showed depressive symptoms (Birmaher et al, 2004). Still other researchers found a biological link between depression and dysregulation of stress systems (Shipman et al., 2003), physical disability or presence of chronic conditions and poor perceived health (Kaplan, Roberts, Camacho & Coyne, 1987); female gender, somatic illness, cognitive impairment, and a history of depression (Djernes, 2006); more depressed at baseline (Hinton, Tiet, Tran, & Chesney, 1997) and physical health or disability (Anderson, Kohler & Letiecq, 2005; Reker, 1997).

From the socioeconomic point of view, the risk factors include low education (Kaplan et al., 1987); residential move, job loss, money problems, and a breakdown of social norms or moral standards (Djernes, 2006); unemployment, limited access to reliable transportation and a lack of permanent housing (Anderson et al., 2005); neighborhood-level economic disadvantage
(e.g., percentage of residents below the poverty line) and low socioeconomic status (Hovey, 2000; Leonard, 2013).

From the social support point of view, risk factors include social isolation, limited sense of belonging, and lack of close social contacts (Djernes, 2006; Vanderhorst & McLaren, 2005; Smart & Walsh, 1993; Anderson et al., 2005); childhood physical abuse and physical abuse by partner (Campbell, Kub, Belknap & Templin, 1997); social resources (Reker, 1997); elevated acculturative stress and family dysfunction (Hammen, 2006; Hovey, 2000); poor attachment (Ayala & Coleman, 2000; Eberhart & Hammen, 2006; Hinton et al., 1997); unmarried status (Scott et al., 2010) and low functioning family relationships and inability to depend on others (Eberhart & Hammen, 2006).

From personal resources and history point of view, risks include functional (inability to carry on daily activities) and cognitive (dementia or other) impairments, and stressful life events (Djernes, 2006); daily hassles and self-care agency (Campbell et al., 1997); choice/responsibleness and personal meaning and optimism (Reker, 1997); boundary ambiguity and mastery of stressful situations (Boss, Caron, Horbal, & Mortimer, 2004); self-esteem (Smart & Walsh, 1993); delinquency and drug use (Cutrona et al., 2005; Anderson et al., 2005); lack of hopefulness toward the future (Hovey, 2000); older age and English proficiency (Hinton et al., 1997); and criminal conviction history (Anderson et al., 2005).

The idea that parentification and depression are related is consistent with the environmental view that negative relationship processes, especially those that occur in families, raise risks for depression. This study then fits into the context of family-of-origin influences on depression. The next section reviews gender differences in depression in various countries of the world.
Depression and gender. In a study of 10 countries (U.S., Canada, Puerto Rico, France, West Germany, Italy, Lebanon, Taiwan, Korea and New Zealand), researchers found that the rates of major depression were higher for women than men in every country (Weissman et al., 1996). Epidemiology data from around the world demonstrate that the statistic that prevalence rate for depression for women is anywhere from double to quadruple that of men (Culbertson, 1997; Sileo, 1990; Weissman & Olfson, 1995). Hence, it seemed that gender is an important variable to examine more closely and was included in the present study as a key comparison variable.

In a study of the U.S. and other western nations, the National Institute of Mental Health [NIMH] (1987) provided three possible explanations for this phenomenon: (1) women are more willing to report depressive symptoms and to seek help so they can provide more accurate records of their symptoms to healthcare providers, (2) biological differences in women make them more susceptible to depression than men, and (3) psychosocial factors which differentially affect women such as lower wages, perceived inferior social roles and less favorable social opportunities could be related to higher depression rates among women. Hankin et al. (1998) found that between the ages of 15-18, the prevalence of depression in girls increased to twice the prevalence of boys. They also reported that, in the average lifetime, 49% of all males will experience a depressive episode compared with 63% of all females. Males will become sad and dejected for different reasons, such as intimate relationships. When an intimate relationship ends, males are more likely to become depressed at the loss than females (Hankin et al., 1998). Culbertson (1997) postulated that depression in men may be concealed by their use of alcohol.

Lee (이지원) and Kim (김성애) (2011) studied 841 depressed men and women and 3,969 non-depressed men and women in Korea and found females to be 74.3% of the depressed group,
a significantly higher representation of females than in the non-depressed group. Similarly, Park and Kim (2011) found, in a meta-analysis of depression-related studies in Korea, that women were 1.7 times more likely to be depressed than men. Korean women are more susceptible to depression partly because emotional asceticism is a socialized virtue among Korean women, and they are acculturated to endure hardships in life, instead of openly discussing emotional distress (Kim, 1999).

**Depression Among South Koreans.** Chang, Hong, and Cho (2012) estimated the total costs of depression to South Korea to be over $4 billion, of which the direct medical costs related to treating depression in South Korea to be around $153 million. Another study estimated the total cost of depression to be around $6.5 billion (Lee & Ko, 2012). The incidence of depression in Korea has more than doubled between 2000 and 2010 (prevalence of from 220,000 people to 530,000) and the direct medical expenses related to treating depression have more than quadrupled (from $48 million to $210 million, U. S. dollars) during the same period. The prevalence rate of depression among Koreans has increased 68% over the last 10 years (Korean Ministry of Health and Welfare [KMHW], 2012), which is particularly distressing given that only 11.4% of these individuals received treatment (Clinical Research Center for Depression in Korea, 2012). Applying the DSM-IV criteria to 3,719 individuals (aged 15 or older), Ohayon and Hong (2006) found that 21% of the general population in Korea reported a depressive mood, and 3.4% met the criteria for major depressive disorder. However, this is lower than the 5% - 8% percent prevalence rate for major depression among North American adults (Kessler et al., 2005). Similarly, the life time incidence rate and one-year incidence rate of depressive disorders in Korea, using the Composite International Diagnostic Interview (CIDI), was 5.6% and 2.5%
respectively, whereas the same rates for Americans were 16.6% and 6.7% respectively (Park & Kim, 2011).

Consistent with the risk factors for depression in the U.S. reviewed above, a variety of individual factors related to depression have been identified in Korean populations including gender, education, health level, marital status, and income (Cho, Nam, & Suh, 1998; Ohayon & Hong, 2006; Shin, Shin, Park, & Yi, 2004). Other identified risk factors for depression are low self-esteem (Choi, 1999; Kim, 1997; Lee, 1991); low education, divorce/ separation/ loss of spouse, and low support structure and chronic illness (Park & Kim, 2011). Koreans also report more tenuous social support structure, lower satisfaction from marriages, and higher stress, which leads to higher depression (Yoon & Chung, 2013).

Aside from these micro-level influences, Kang (2009) suggested macro-level changes that contribute to the rising levels of depression, such as rapid structural change in Korean society over the last two decades, the nuclearization of family, disintegration of extended family support structure, and focus on materialism. The average household size in Korea has decreased dramatically from 4.52 people in 1980 to 2.44 people in 2012 (Korean Bureau of Statistics, 2014). These macro-level changes seem to create a crisis in emotional well-being among Koreans to the point where a New York Times article referred to Korea as “a nation on the verge of nervous breakdown” (McDonald, 2011).

Despite all these signs of compromised emotional well-being in Korea, the lower prevalence rate of depression in Korea compared to that in the U.S. seems enigmatic. Suicide rates in Korea are almost triple those in the U.S. and the prevalence rate of suicides in Korea is highest among the 34 most advanced Organization for Economic Cooperation and Development (OECD) countries in the world at 33.3 suicides per 100,000 people, compared to the 14th rank for
the U.S. with 12.5 suicides per 100,000 people (OECD, 2013). Given that depression is often a precursor to suicide (Ahn, 2012; Franko et al., 2004; Westefeld & Furr, 1987), the lower prevalence of depression in Korea than in the U.S. is hard to explain. It may be partly due to the fact that Koreans tend to under-report negative psychiatric symptoms (Sohn, 2013; Park, Kim, Lee, Heo, & Yu, 2014), perhaps due to the influence of Confucianism which encourages propriety of appearance (DeVos, 1998).

**Parentification**

Parentification was described by Boszormenyi-Nagy and his colleagues (Boszormenyi-Nagy & Krasner, 2013; Boszormenyi-Nagy & Spark, 1973) as the use of children by parental figures to satisfy their parent’s possessive, dependent, aggressive, or sexual needs. It is defined as “the reversal of positions where the children are so overburdened with demands for responsibility that they are never given the chance to be children” where the parent experiences “the subjective distortion of a relationship as if one’s children were his/her parent” (Boszormenyi-Nagy and Spark, 1973, pp 151-153). Although the behaviors parentified children develop might be characterized as responsible and mature (Chase, 1999), parentification has been shown to predict depression (Martin, 1996; Williams & Francis, 2010).

This role reversal in parentification can be manifest in the instrumental function of taking care of the household and/or the emotional function of supporting the parent(s). The instrumental function is the process of children performing a primary physical caregiving role in the family, often at the expense of their own development and self-realization (Jurkovic, 1998). This function could include caring for younger siblings or sick parents, working to earn money, and performing housekeeping duties. Emotional function refers to the process where the children sacrifice their own needs for attention, comfort, and guidance in order to accommodate and care
for emotional needs of the parent (Chase, 1999). The emotional function could be manifest in providing advice, comfort or protection to parents or other family members, even replacing a missing spouse (Jurkovic, 1998). In extreme cases, the emotional caregiving function can include sexual abuse by a parent perpetrated on a child, an ultimate elevation of the child to the adult position (Schier, Herke, Nickel, Egle, & Hardt, 2014). These parentification functions can take many subtle and flagrant forms including ruptured attachment, no appreciation or validation expressed for the child’s contributions, chronic exploitation of the child’s eagerness to please the parent, scapegoating the child, trying to achieve the parent’s unfulfilled dreams vicariously through the child, sexual abuse, and forcing split loyalty on the child for the parents (Boszormenyi-Nagy & Krasner, 2013).

**Theoretical foundations of parentification.** The concept of parentification has roots in contextual, structural, trans-generational, and psychoanalytic family therapy theories. During the course of their contextually-oriented clinical work, Boszormenyi-Nagy and his colleagues (1987) noticed that parents of disturbed children tended to ascribe parentlike qualities to their children, in an unconscious effort to replace the lost parent, being fixated on the loss of a parent of their own. From a Contextual Family Therapy view, parents consider their unmet needs for nurturance in childhood as "accounts due" and look to their children for parenting as a way of balancing the ledger (Schier et al., 2014). The parents feel entitlement because their needs as children were not met so they replay the painful and abusive scripts from their own childhood, which sets the stage for multi-generational perpetuation of pain and abuse (Jurkovic & Jurkovic, 2001). Parentified children’s constant struggle between yearning for true individuation resulting in a fully developed authentic self and the shame- and guilt-laden symbiotic togetherness with the family-of-origin creates an impossible dilemma in parentified children (Boszormenyi-Nagy & Spark,
From the Structural Family Therapy viewpoint, a hallmark element of parentification is a role reversal between parent and child which is a violation of subsystem boundaries (Minuchin, 1981). Parentification can be manifested in children’s triangulation where children are drawn into conflict in the marital dyad to hold their parents’ marriage together, or in parents ascribing the parenting role to the oldest sibling. During the parentification process, parents create an environment that fosters developmentally-inappropriate caretaking behaviors in their children. When children assume a parental role, they exhibit physical caretaking of young children and even take care of parents physically or emotionally because of the overtly regressive behavior of the parents, which depletes the child both emotionally and physically (Jurkovic, 1998).

Trans-generational models of family therapy identify parentification as an altruistic self-sacrifice by the parentified child, which results from prioritizing the parent’s needs over one’s own needs in a desperate attempt to gain parent’s attachment and approval. It is an attempt to create some semblance of order in a chaotic family situation and maintain pseudo-mutuality among family members (Boszormenyi-Nagy & Spark, 1973). This self-abnegating attempt by the child allows for toxic symbiosis with the parent who does not possess the capability or willingness to separate the child’s needs from his/her own and does not demonstrate an attitude of positive self-care to meet his/her needs through other means than from the child (Morris, 1982). In an isomorphic pattern, the depleted child, in turn, perpetuates the painful coping patterns within the next generation (Boszormenyi-Nagy & Spark, 1973). Adults who were parentified as children pass down these patterns of relationships to compensate for their losses in childhood, hoping their children will parent them and restore reciprocity and ethical balance (Earley & Cushway, 2002). Family members caught in this cycle can consciously or
inadvertently collude in maintaining these patterns because the need configurations of colluding partners fit in to a pattern of mutual complementation, and they delay individuation and growth on everyone's part (Boszormenyi-Nagy & Krasner, 2013).

From a Psychoanalytic Object Relations Family Therapy perspective, scholars have postulated that parentification represents a destructive idealization of a child where the parent ascribes superhuman degrees of perfection and trustworthiness to the child (Boszormenyi-Nagy & Krasner, 2013; Wells & Jones, 1999). Some parents use their children as self-objects to fulfill their own unmet needs and idealize the children (Schier et al., 2014). Inevitably, the idealized child falls short of perfectionistic expectations, then becoming an alleged traitor and a target of "well-deserved" blame, which justifies the mistreatment of the parentified child to whom the need for a perfect caretaker was projected by the offending parent (Boszormenyi-Nagy & Krasner, 2013). These children often develop a “false ego” or false self, an internal structure to help them cope with their impossible burden (Schier et al., 2014). The act of giving up one’s own strivings for self-development in the service of the parents, in the form of a false ego, lays the foundation for narcissism in adulthood for some children (Jones & Wells, 1996). In response to the same distressful condition of parentification, other children may adopt masochistic, self-defeating behavior patterns to meet the parent’s emotional or physical needs and become accustomed to the pain as a result of denying their own autonomous needs (West & Keller, 1991). Often, these children resort to infantilization as manifested in psychosis, addictions or criminal behaviors in an effort to avoid the pain of mourning that is required to relinquish inappropriate relational patterns (Boszormenyi-Nagy & Krasner, 2013).

Since low self-esteem seems to be one of core constructs of parentification (Miller, 1997), it is necessary to examine how these children might develop a low self-esteem to cope with the
perceived unfairness or exploitation in parentification. In an effort to make sense of and peace with the chaotic family dynamics and their role in the family, parentified children might come to question their right to fair treatment and accept this unfair treatment as deserving. Once this unfair treatment is viewed as deserving by the parentified child, it could exacerbate and reinforce their disturbed self-concept in a vicious cycle (“I must be deserving of this unfair treatment because I am flawed. I must be flawed judging from the unfair treatment by my parents”). If they are not deserving of fair treatment, then their exploitation is understandable and perhaps even just from their perspective. Some researchers have noted this acceptance of unfair treatment as deserving for the flawed self in parentified children and even gave it the name of “destructive unentitlement” (Jurkovic & Jurkovic, 2001). This “destructively unentitled” position is inimical to positive self-concept (Jurkovic & Jurkovic, 2001) and could in turn result in an impaired sense of self-worth. It is from the angle of this fragmentation of self-concept that this study attempts to conceptualize parentification.

Research found that parentification might result in both positive and negative consequences. What seems to distinguish adaptable parentification that produces beneficial results such as resilience and adaptive coping skills as opposed to deleterious effects such as depression, anxiety and fragmented sense of self is (1) whether the parentified children’s contributions are fairly acknowledged, (2) how long the parentification lasts, (3) how severe the extent of parentification is and (4) at what age the parentification takes place (Jurkovic, 1997). If the child is overtly asked for help and acknowledged for his/her helpful and useful availability, which is the opposite of guilt inducement, the experience is incorporated into his future self-confidence and sense of competence. In contrast, withholding acknowledgment, coupled with guilt-laden blame or accusation, is experienced by the child as destructive manipulation
Therefore, the family justice structure, or equal distribution of relational benefits and burdens in the fairness ledger, is an important contextual variable that may moderate the relation of parentification and self-concept (Jurkovic, 1997).

**Outcomes related to parentification.** Little research is available on the long-term outcome of parentification. Sometimes there are beneficial effects of parentification. The occasional role reversal between parents and children provides children with an opportunity to master socialization skills, become more responsible, and rehearse future role activities (Boszormenyi-Nagy & Krasner, 2013). Indeed, researchers found in a longitudinal study that early parentification predicted better adaptive coping skills and less alcohol and tobacco use among young adults (Stein, Rotheram-Borus, & Lester, 2007). In a study of 156 young adults, Hooper and colleagues found that parentification was linked to resiliency and posttraumatic growth in parentified children (Hooper, Marotta, & Lanthier, 2008). Tompkins (2007) also reported positive consequences such as higher levels of resilience among parentified children because they learn to be responsible.

However, ample research available to date has linked parentification with many deleterious conditions including depression in young adults (Williams & Francis, 2010) and adolescents (Hooper, Doehler, Jankowski, & Tomek, 2012); anxiety in young adults (Jacobvitz & Bush, 1996), substance use among young adults (Carroll & Robinson, 2000), codependency in young adults (Wells et al, 1999), excessive caretaking behavior patterns among female college students (Valleau, Bergner, & Horton, 1995), eating disorders in young adults (Rowa, Kerig, & Geller, 2001), and emotional distress/ substance use / and conduct problems among adolescents (Stein, Riedel, & Rotheram-Boras, 1999). Consistent with these findings, the positive link between depression and parentification has been empirically found in South Korea as well, as
reported in a study of 479 adolescents (Song & Lee (송은주 & 이지연), 2010). Without proper intervention, the consequences of parentification persists through lifetime because the structure of the person’s interaction with the parent is carried forward into adulthood and serves as a template for negotiating adult relationships (West & Keller, 1991).

In terms of consequences experienced during childhood and adolescence, parentification has been linked with low academic attainment. In a study of 360 young adults, researchers established that low academic status participants reported having experienced greater levels of parentification (Chase, Deming, & Wells, 1998). Others have found parentification to be linked with poor social adjustment in school (Woolgar & Murray, 2010) as well as interfering with healthy child and adolescent development (Dawson, 1980). Chase and colleagues (1998) found that parentification jeopardizes healthy separation-individuation of young adults from their parents. Researchers have shown that parentification is associated with guilt and shame (Stein et al, 1999; Wells & Jones, 2000), probably from internalizing the inevitable failure to perform adult-duties imposed, implicitly or explicitly, on parentified children (Jurkovic, Morrell, & Casey, 2001).

In an effort to meet the parent’s needs, the parentified child is placed in a position of denying a development of a healthy self concept (Jurkovic et al, 2001). Parentification has been found to be linked with low self-esteem among young adults (Wells et al, 1999). Similarly, in a study of 416 children (ages 10 -18), researchers found that parentification was linked to poorer self-concept and lack of self-esteem (Godsall, Jurkovic, Emshoff, Anderson, & Stanwyck, 2004). They also noted the most destructive aspect of parentification is its interference with the child’s mastery of developmentally appropriate tasks that build self-concept. With this arrested development of healthy self-concept comes a lack of self-esteem where the parentified child
equates self-worth with competence and mastery of performance, an impossible task for a child attempting to perform duties appropriate for an adult.

The duration and severity of parentification also plays a part in determining the extent to which parentification harms the child. Every family requires situational demands on the members to exert more than the ordinary to overcome temporary life stressors. However, excessive caretaking that becomes a chronic process depletes children both emotionally and physically but at the same time too little parental expectation of responsible role behavior is also unhealthy (Jurkovic, 1997). Similarly, carefully supervised responsible role behavior that is developmentally age-appropriate can introduce proper role inductions to children and can be quite adaptive. After reviewing empirical and conceptual literature on parentification, Jukovic (1997) concluded that the younger the age of the child at the onset of parentification, the more severe the extent and the longer the duration, the more damaging are the effects of parentification.

In summary, parentification is a loss of a child’s self in an effort to secure the love and approval from fragmented parents by performing functions beyond their age or inappropriate for the parent-child boundaries. While parentification is related to negative outcomes in both males and females, a few studies have examined whether girls or boys are more likely to be parentified.

**Parentification and gender.** The gender-role practices in both the American and Asian culture traditionally socialize girls to organize their behavior, goals and personalities around responsibilities to others, caring, and interdependence (Larsen & Krumov, 2013). In other words, girls are socialized to provide nurturing behaviors to children and toward males (Anyon, 1983). Very little research is available regarding parentification and gender differences, but what studies are available report conflicting findings. In two studies of university students, researchers (Castro et al, 2004; Jurkovic, Thirkield, & Morrell, 2001) found no significant gender differences in the
level of parentification. However, other researchers (Byng-Hall, 2008; Goglia, Jurkovic, Burt, & Burge-Callaway, 1992) found that females reported greater caretaking responsibilities in their families of origin than males.

Studies of Korean adolescents similarly report inconsistent gender findings. In a study of 639 high school students in Korea, the levels of parentification between female and male students were not different (Yoo, 2012). On the other hand, Kim and Lee (2010) used Jurkovic’s constructs of unfair, instrumental and caregiving parentification (Jurkovic & Thirkield, 1999) and found that female adolescents in South Korea reported higher levels of instrumental parentification than males, and males had higher levels of unfair parentification than females. In addition, other Korean researchers studied 347 high school students in Korea and found that girls exhibited higher levels of psychological maladaptation in response to parentification than boys (Kang, Yoo, & Yoon, 2010). Some researchers have explained the higher level of parentification reported by females as a result of response bias where males report less caretaking parentification because those responsibilities are not as socially acceptable for males (Goglia et al., 1992; Chase, 1999). Jurkovic (1997) postulated that lower expressions of caretaking by males might result from their compliance to the socialized male gender role by embedding the caring expressions in more acceptable male attitudes and activities such as distracting misbehaviors. Based on these findings, gender seems to be an important variable to examine in considering the effect of parentification on depression because females in both countries may be more parentified as a result of their socialized role of caretaking.

**Parentification in Korea.** In Korea, Confucian heritage encourages filial piety, loyalty to the family and collectivism whereas the more dominant force shaping the U.S. psyche is individualism (Hofstede, 1984). Hofstede characterized individualism as being “I” conscious,
autonomy, emotional dependence, individual initiative, right to privacy, pleasure seeking, financial security, need for specific friendship and universalism. On the other hand, collectivism is associated with a “we” consciousness, collective identity, emotional dependence, group solidarity, sharing, duties and obligations, need for stable and pre-determined friendship, group decisions and particularism. These differences form the context which may allow Korean parents and children to more easily cross the boundary from filial piety to parentification. Being true to Confucian principles, Korean children are expected to respect and obey parents, to take care of their parents’ needs, to honor their parents even after the parents have died, to ensure that parents are comfortably housed, fed and dressed, and to keep parents from worrying about children (Kim & Choi, 1994). Being a collectivistic society, Koreans emphasize filial piety due to the influence of Confucianism and this emphasis on filial piety may more easily cross over to parentification in some Korean families (Yoo, 2012). The individualistic society of the U.S. emphasizes equality and independence, but the collectivistic society of Korea emphasizes attributes necessary for harmonious relationships such as respect for authority, compromise, humility and devotion (Moon & Choi, 2008).

With the influx of the Western cultural influences over the last few decades, Korea has experienced a recent surge in divorce rates, resulting in a dramatic increase in the number of single-parent households, which, in turn, has resulted in more parental role reallocation to children and an increase in parentification (Kim & Lee, 2010). Moon and Choi (2008) concluded that the concept of “hyo” (filial piety) increases the risk that Korean children are parentified as they respond to obligations to take care of their parents.

As is true in some studies reported in English journals, a few researchers (Kim & Lee, 2010) in Korea have reported positive consequences such as increased levels of social
adjustment and compliance to rules and loyalty to the family. However, others have found negative effects of parentification. In a study of 503 middle and high school students in Korea, Choi and Kang (최명선 & 강지희) (2008) found an association between parentification and depression and anxiety. Using Jurkovic’s constructs of emotional, instrumental care giving, and unfairness parentification (Jurkovic & Thirkield, 1999), these researchers found a relationship between emotional parentification and quality of interpersonal relationships as well as a relationship between unfairness parentification and poor personal development and a loss of sense of purpose. Kim and Lee (2010) argued that emotional parentification interferes with opportunities to practice age appropriate emotional expressions, which results in diminished quality of interpersonal relationships. They also argued that unfairness parentification hinders goal achievement and self-efficacy. The next section examines depression in general, explores the specific theoretical foundations underlying why parentification and depression may be related, and then explores empirical studies of parentification and depression in adolescents and college students.

Self-Care as a Potential Moderating Variable

Since depression extracts an enormous toll on the individual and society, it is important to identify how to mitigate the impact of predictors of depression, which are often out of one’s control. By the time an adult who was parentified as a child is experiencing depression, it is too late to change parentification because the adult is likely no longer living with her/his parents. Therefore, it is important to identify factors that an individual can control that buffer the relationship between parentification and depression. Self-Care is potentially such a factor.

There appears to be an almost ubiquitous agreement on the need for self-care for clients among mental-health practitioners (Wong, Ip, & Shiu, 2012; Yamashita, 1998). For the purpose
of the current study, self-care is defined as “the practice of learned, goal-oriented activities that individuals initiate and perform on their own behalf, which help them maintain life, health, and wellbeing” (Orem, 1995, p.104). A self-directed set of behaviors that persons hope will enable them to recover from negative events such as substance dependence, mental illness, or disabling relationships. Important characteristics of self-care include 1) that the behaviors are self-directed and involve agency or the capacity of a person to choose, 2) that these behaviors instill an attitude of hope and self-determination, 3) that the behaviors include reaching out to others to form positive interactions, 4) that these behaviors transform a person to have more hope, and 5) that self-care includes different areas of a person’s life including physical, emotional, financial, and relational (Onken et al., 2007). This concept of self-care has long been used in medical pedagogy, with the widely used framework refined over many years by Dorothea Orem (Orem, 1959; Orem, 1995; Orem, 2003).

**Agency and self-direction in self-care.** The attitude of self-care is manifest in agency, which is a central component in Orem’s model where she defines self-care agency as “the complex acquired ability to meet one’s continuing requirements for care of self that regulates life processes, maintains or promotes integrity of human structure and functioning and human development, and promotes well-being” (Orem, 1995, p. 212). This attitude of self-care precedes the behavior of self-care (Renker, 1999). The emphasis on agency in self-care has also influenced the recent strength-based movement, with its foundation on self-determination, self-efficacy and resiliency (Peebles et al., 2007).

**Behavioral practice of self-care.** One of the pivotal principles of self-care defined by Orem was that of self-care as a “practice of learned, goal-oriented activities” which is demonstrated as a set of concrete behaviors. This definition of self-care as a practice has been
synonymously used almost three decades with resiliency, coping and self-management, which enables one to recover from psychological and emotional deficiency (Ridgway, 1999). Examples of self-care as a practice may include development and maintenance of a healthy diet, exercise, leisure activities, sleep patterns, spiritual activities such as praying, contacting others, engaging in creative endeavors, self-advocating, and other behaviors (Onken et al., 2007). In addition, self-care can include cognitive coping practices such as meditation, reframing, acceptance and self-soothing (DiTullio & MacDonald, 1999); recreation and social support (DiTullio & MacDonald, 1999; Osipow & Spokane, 1998); exercise, stress reduction efforts, and compliance to medication regimen (Didelez, Pigeot, Dean, & Wister, 2000); maintaining mutually supportive relationships (Jenaro, Flores, & Arias, 2007; Ridgway, 1999); and use of humor (Jenaro et al., 2007). Supporting Orem’s dual requirements of agency and practice aspects of self-care, Sousa and colleagues found that beliefs alone are insufficient to improve clinical outcomes and that participants only improved in the study by implementing actual behaviors (Sousa, Zauszniewski, Musil, Price Lea, & Davis, 2005).

Releational in nature. In recent decades, the rather individualistic view of self-care, which stemmed from the medical field, has been expanded to include a systemic aspect. It is crucial to examine self-care from a systemic lens because the influence of, and the quality of attachment to, a person’s loved ones is significant for the success of one’s self-care (Albright, Parchman, & Burge, 2001). Orem, who provided the initial definition of self-care, later expanded her definition of self-care to include the patients themselves, those around them or in their environment to regulate their own functioning or development (Orem, 2003). This systemic view of self-care was further refined by Onken and associates (2007) who asserted that the individual must have hope, find an environment that offers opportunities for growth, and engage in
interactions that maximize the individual’s choices to experience new behaviors. This framework facilitates a conceptual understanding of self-care in terms of both first order change, which takes places when the individual changes but not the system, and second order change, which takes places when the system itself changes in response to the individual change (Watzlawick, Weakland, & Fish, 1974).

**Multi-modal.** Self-care may occur across several areas including physical, emotional, cognitive, spiritual, environmental, relational and financial (DiTullio & MacDonald, 1999; Jenaro, 2007; Orem, 2003; Ridgway, 1999). Indeed, some have asserted that self-care leading to therapeutic experience must address all aspects of individual’s life, including social, intellectual, occupational, physical and spiritual (Loughead, 1991).

In summary, key elements of self-care includes the following: (1) self-care targets both the self as well as the environment and others in an ecogenetic, systemic way (Orem, 2003; Ridgway, 1999), (2) it involves self-directed efforts (Orem, 1995; Peebles et al., 2007, Ridgway, 1999), (3) it addresses the practices of self-care (Layne, Hohenshil & Singh, 2004; Orem, 2003; Ridgway, 1999), (4) these interactions transform the mind to have hope, (Peebles et al., 2007; Renker, 1999), and (5) it encompasses comprehensive aspects of one’s functioning such as emotional, physical, cognitive, financial, relational, and spiritual (multi-modal in nature) (Didelez et al., 2000; Layne, Hohenshil & Singh, 2004; Orem, 2003; Ridgway, 1999). The next section addresses studies that have empirically examined the link between self-care and depression.

**Self-Care and depression.** Traditionally, the concept of self-care has been understood in the medical context. Hence, many studies linking self-care and depressive symptoms have been in the context of medical illness. Lin and colleagues (2004) studied 4,463 diabetes patients and
found a link between depression and poor diabetes self-care practices such as lack of physical activity, unhealthy diet, and lower compliance to medication regimen. Similarly, Ciechanowski and colleagues found an association between lack of self-care and depression in diabetics (Ciechanowski, Katon, Russo, & Hirsch, 2003). In another study of 63 stroke survivors, researchers linked self-care and self-efficacy to depression (Robinson-Smith, Johnston, & Allen, 2000). In addition, in a study of 190 primary care patients aged 65 years or more, researchers found that self-care was negatively linked to depression (Sörensen, Mark, Chapman, Duberstein, & Lyness, 2012). In Korea, researchers studied 69 Type II diabetic patients and found that self-care was negatively linked to depression (Jeong & Kim, 2012).

However, in recent years, more and more researchers are viewing self-care from a non-pharmacological perspective such as mindfulness, meditation and exercise (Segal, Williams, & Teasdale, 2012). In a meta-study of 39 studies totaling 1,140 participants, researchers found that mindfulness-based therapy was effective for treating depression (Hofmann, Sawyer, Witt, & Oh, 2010). In another meta-study of 21 studies with 810 participants, researchers found guided self-help was effective for treating depression (Seekles, Straten, Beekman, van Marwijk, & Cuijpers, 2011). In Korea, research tested 37 self-care practices to treat depression and found that 11 of them were effective: exercise, St. John's wort, self-help books, exposure to sunlight, acupuncture, exposure to negative ions, massage, relaxation, certain music, hypnotherapy, and aromatherapy (Lee & Park, 2007). Another study found a negative association between depression and breathing exercises combined with daily walking (Kim, 2011).

**Self-Care as a moderating variable.** Self-Care has been shown to be negatively linked with depression in many studies involving U.S. samples (Lin et al., 2004; Robinson-Smith et al, 2000) and in Korea (Lee & Park, 2007; Park, Hong, Lee, Ha, & Sung, 2004). No research to date
has examined whether self-care moderates the relationship between parentification and depression. However, the conceptualizations behind self-care, such as self-direction, instilling hope, facilitating positive interactions, and implementation of wellness behaviors, makes self-care a likely candidate for buffering the effects of parentification on depression.

However, only a very few studies have examined self-care as a moderating variable. It has been used as a moderating factor in heart failure patients and psychological distress (Hwang, Moser, & Dracup, 2013), in the effect of work-family conflict on employee well-being (Moreno-Jimenez et al, 2009), in the relationship of trauma reactivity and PTSD symptoms (Pineles, Mostoufi, Ready, Street, Griffin, & Resick, 2011), and in the relationship of traumatic brain injury and neurocognitive outcomes (Babikian & Asarnow, 2009), in the relationship between diagnosis of HIV and outcomes (Collins et al, 2001), and in the relationship between substance abuse treatment and outcomes (Carpenter-Song, Hipolito, & Whitely, 2012). No studies could be found which examined self-care as a moderator of the relationship between adverse childhood events such as parentification and adult outcomes such as depression.

**Statement of Purpose**

The purpose of this study was to examine how parentification in childhood is related to depression in adulthood and how self-care moderates the association between childhood parentification and depression in adulthood. Another aim of the study was to examine how gender and country of residence may moderate the relationship between these variables as shown in Figure 1.

**Hypotheses**

The following hypotheses were tested.

Hypotheses related to differences among means (univariate statistics):
1. Mean depression scores will be significantly higher for South Koreans compared to U.S. Caucasians.
2. Mean depression scores will be significantly higher for females compared to males.
3. Mean parentification scores for South Koreans will be significantly higher compared to U.S. Caucasians.
4. Mean parentification scores for females will be significantly higher compared to males.

Hypotheses related to relationships among variables in Structural Equation Model (bivariate statistics):

5. Parentification will be positively associated with depression for all four groups (U.S. males and females; Korean males and females).
6. Self-Care will be negatively associated with depression for all four groups (U.S. males and females; Korean males and females).
7. Self-Care will significantly moderate the relationship between parentification and depressive symptoms for all four groups (U.S. males and females; Korean males and females).

Methods

Participants

The participants for this study were randomly selected from marketing databases both in the U.S. (Bellweather Interactive, a market research company based in New Jersey) and Korea (TNS Korea, a global market research company). Participants were contacted through an e-mail blast and promised a $20 gift card for participating. The goal was to reach a sample size of 1,000 (250 U.S. males; 250 U.S. females; 250 Korean males; 250 Korean females) and so access to the
The questionnaire was shut down after 500 Koreans and 501 Americans completed questionnaires online.

The mean age for U.S. men and women was 38.36 (SD=8.41) and 36.84 (SD=8.48) respectively and the mean age for Korean men and women was 36.52 (SD=6.87) and 35.66 (SD=8.15) respectively. The majority of both the U.S. and Korean participants were married (U.S. men: 60.8%; U.S. women: 64.1%; Korean men: 55.6%; Korean women: 60.8%). In terms of education, 48.4% of U.S. men and 44.3% of U.S. women reported having a bachelor’s degree or higher compared to 74.4% of Korean men and 55.6% of Korean women. Overall, both men and women reported they had good health with only 4.6% of males and 4.0% of females reporting serious health problems. These percentages are within the range of what would be expected in a community sample of men and women of these ages (Asakawa, Feeny, Senthilselvan, Johnson, & Rolfson, 2009; Ullman & Siegel, 1996). Inclusion criteria required that all participants were between the ages of 19 and 55 years old and were in a committed romantic relationship.

**Translation of Measures into Korean**

To maximize the accuracy of translation of the measures in the current study, the Modified Serial Approach proposed by Carroll and his colleagues was implemented (Carroll, Holman, Segura-Bartholomew, Bird, & Busby, 2001). First, the English survey was translated into Korean by two native Koreans, one with extensive residency and acculturation to the U.S. and the other with more recent residency. A third native Korean, bilingual in English with 25 years of residence in the U.S. and 20 years of residence in Korea, compiled the two versions of the translation. Second, to assess clarity and equivalence, the instrument was then taken to three Koreans to verify comprehension. Third, the measures were then back-translated from Korean.
into English by a Korean native with 10 years of U.S. residency and a college education. The original English version and the back translated version were then compared, and appropriate changes were made. Bi-cultural individuals familiar with both cultures and languages then reviewed the instrument for content validity, and changes were made to ensure correct translation of even minute nuances.

**Measures**

**Parentification.** A latent variable, parentification, was created using as indicators the three subscales of The Filial Responsibility Scale – Adult [FRS-A] (Jurkovic & Thirkield, 1999). Using a Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), participants responded to 30 items in the past asking them to retrospectively consider their childhood experiences. The items are based on parentification processes identified by Boszormenyi-Nagy and Spark (1973) as well as perceived fairness. The three subscales, each with 10 items, were instrumental parentification (*I did a lot of the shopping for groceries in my family*), expressive caregiving (*At times, I felt like I was the only one my mother or father could turn to*), and perceived unfairness (*In my family I often made sacrifices that went unnoticed*). The possible range of scores for each subscale was 10 to 50 with higher scores indicating more parentification. Cronbach coefficients for instrumental, expressive, and fairness subscales were .74, .79 and .86 respectively (Jurkovic et al., 2001). The FRS-A has been used for South Korean research where the Cronbach’s alpha coefficients were .67, .72 and .74 respectively (Kim & Lee, 2010).

However, Cronbach’s alpha typically underestimates the reliability of a measure because categorical variables are treated as continuous ones but this limitation can be overcome by the variance approach to reliability (McDonald, 1999), which is more appropriate for categorical
variables. With factor loadings, one can calculate the reliability Omega using the following formula described by McDonald (1999, p.89):

\[ \omega = \frac{\sum \lambda_i^2}{\left( \sum \lambda_i^2 + \sum \psi_i^2 \right)}, \]

Where \((\sum \lambda_i)^2 = \text{square (sum of standardized factor loadings)}\)

\[ \sum \psi^2 = \text{sum of residual variances} \]

\[ \psi_i^2 = 1 - \lambda_i^2 \]

Therefore, the reliability of the measures used in the present study is calculated using Omega with the formula above. The Omega coefficients for each of the measures are reported later in the results section. Results for the model fit information, factor loadings and factor structures for all latent variables will be reported in the Analysis section.

**Self-care.** A latent variable, self-care, was created using the 24 items in Recovery Enhancing Environment Measure (REEM) developed by Ridgway & Press (2004). Of the self-agency, efficacy, recovery, coping and self-care related instruments, the Recovery Enhancing Environment Measure (REEM) developed by Ridgway and Press (2004) was determined to be most consistent with the self-care definition described earlier in the Literature Review. It satisfies the five elements of self-care (self-initiation, hope, behavioral practices, systemic in nature, and multi-modal). Participants were asked to respond to 24 items measured on a five-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). Items were associated with the elements of self-initiation (I am learning new things that are important to me), hope (I believe I can make positive changes in my life.), self-care practice (I am involved in meaningful productive activities.), ecogenetic / systemic (I have at least one close mutual (give-and-take) relationship.), and multi-modal (I have a positive spiritual life/connection to a higher
power; My living situation is safe and feels like home to me.) (Ridgway, 2004). The possible range of scores varies from 24 to 120 with higher scores indicating better self-care. Ridgway found the reliability of the measure in terms of the Cronbach’s alpha of .89. In terms of the construct validity, the overall fit using the Flemming’s index was .76, which represents an acceptable level of fit (Hammond, O'Rourke, Kelly, Bennett, & O'Flynn, 2012). Items also loaded onto one factor with factor loadings ranging from .44 to .61 (Ridgway & Press, 2004). The Omega coefficients are reported later.

**Depressive symptoms.** The latent variable, depressive symptoms, was created using the 11 items from the Iowa short form of the Center for Epidemiologic Studies Depression [CES-D] scale (Kohout, Berkman, Evans, & Cornoni-Huntley, 1993). The original CES-D items were derived from previously validated depression scales and were selected to represent the major symptoms of depression that have been identified in clinical and factor analytic studies. The internal consistency reliability was reported as .85, split half reliability as .90, and test-retest reliability as .53 (Radloff, 1977).

In terms of validity, correlations of the summed score from the CES-D with the Symptom Checklist 90 (Derogatis, 1996) ranged from .44 to .75 indicating that the measure has good concurrent validity (Radloff, 1977). Using a 4-point Likert scale ranging from 0 (*none of the time*) to 3 (*all of the time*), respondents answered how much they had experienced each item in the last week. Items included depressed mood, feelings of worthlessness, feelings of hopelessness, loss of appetite, poor concentration, and sleep disturbance but do not include items for increased appetite or sleep, anhedonia, psychomotor agitation or retardation, guilt, or suicidal thoughts (Radloff, 1977).
To shorten survey completion time, Kohout et al. (1993) developed a composite of 11 items (Iowa version) which were selected from the Zung Self-Rating Depression Scale (Zung SDS), the Beck Depression Inventory (BDI), the Raskin Scale, and the Minnesota Multiphasic Personality Inventory Depression Scale (MMPI-D). Kohout found the same factor structure as in the original scale (Radloff, 1977) and, the short version explained over 60% of the variance in scores on the original scale (Kohout et al., 1993). In terms of reliability, the Cronbach’s alpha was .81, and the short version was highly correlated ($r = .83$) with the original CES-D (Kohout et al., 1993). Other researchers (Carpenter et al., 1998) found that correlations of the 11 items on the short form with the 20 items on the original version ranged from .88 to .93 and reported an internal consistency coefficient of .87.

Analysis

The data analysis was composed of three large steps. In the first step, multi-group confirmatory factor analyses [CFA] were performed to examine the measurement properties of the latent constructs. Four groups were derived from two cultural samples crossed by respondents’ gender (U.S. males, U.S. females, Korean males, Korean females) which resulted in 251 in the U.S. female group and 250 in the other three groups. As part of this step, mean scores for depression and parentification for U.S. and Korean participants, and male and female participants’ samples were obtained. And latent mean difference tests using the Wald test were performed in relationship to hypotheses 1, 2, 3, and 4.

In the second step, a four-group analysis in SEM was conducted to estimate the moderating effects of self-care on the relationship between parentification and depression. An interaction term (parentification x self-care) was specified in the model to assess whether self-care moderated the impact of parentification on depression, with the maximum likelihood
method (Klein & Moosbrugger, 2000). Standardized beta weights and p-values for
parentification, self-care and depression were estimated in relation to hypotheses 4, 5 and 6.

In the third step, a mixture modeling technique was performed to determine whether there
were heterogeneous subclasses with different moderating effects of self-care on the relationship
of parentification and depression across the four groups. This was done to further explore the
data in relation to hypotheses 4, 5 and 6.

**Confirmatory factor analyses [CFA].** Because these measures were developed from
different populations, it is possible that the measurement of the constructs may differ (Raykov,
Marcoulides, & Li, 2012). Therefore, CFA was performed to ascertain the adequacy of use for
the population in question for the current study.

The items with factor loadings below .40 were dropped to ensure better measurement fit.
The specific items that were dropped will be identified in the results section below. Measurement
invariance across the four groups was tested by comparing a model that had factor loadings
freely estimated across the four groups with alternative models that had equality constraints
imposed on the factor loadings across groups. From these models, factor scores were estimated
and used in the final model to accommodate the small sample size (250) in each sub-group.

When items are treated as categorical variables, the probability of a survey response to a certain
category can be a function of one’s true latent trait ($\eta$) that is weighted by the factor loadings ($\lambda$),
as in the following probit regression: $P (\mu=1|\eta) = \Phi[(-\tau + \lambda \eta)\theta^{-1/2} ]$, where $\Phi$ stands for an
inverse of cumulative normal distribution [CMD] function and $\tau$ for value of CMD at 50%
probability of a response (Yang, Nay, & Hoyle, 2010). The individual level in the latent variable
$\eta$ can be estimated and saved as factor scores or latent scores.
Group differences in the levels of depression, parentification and self-care were examined by estimating the mean differences of the other groups’ from the reference group which was U.S. males (0) and testing for significance using the Wald Chi Square Difference Test (Arbuckle, 1997; Muthén & Muthén, 2012). The group differences were obtained from the latent variables, not from individual items. The advantage of comparing latent means over sum scores of items is that measurement error is controlled for resulting in less bias (Wright, 1999). The reliability of the measures used in the present study is calculated in terms of Omega, using the formula described by McDonald (1999) as shown in the Measures section above.

Results Related to Preliminary Analyses of Measurement Model

**Parentification.** CFA was conducted to ascertain if the original latent factor structure of three subscales held for this sample and how well the latent constructs were measured by the 30 items in the original scale. The original construct with three dimensions fit the data poorly (CFI = .91, TLI = .91, RMSEA = .17). The correlations among the three original subscales ranged from .99 to 1.02 for the U.S. male group, .97 to 1.03 for the U.S. female group, .86 to .94 for the Korean male group, and .93 to .96 for the Korean female group. These high correlations suggested that three constructs were not distinctively identified in any group.

To isolate the items that uniquely measure each dimension, exploratory factor analysis was conducted. Those items with primary factor loadings less than .40 or cross-loadings above .40 were eliminated from this process. As a result, a two-factor model was obtained. CFA was performed to examine the measurement properties. Model modification indices were referenced to identify the items with high cross-loadings where an item did not clearly load on one factor, and these were deleted from the model. As a result, of the 10 items in each of the 3 sub-scales, 4 items from the expressive caregiving sub-scales (#2, #12, #17, & #18) were
combined with the 3 items from the unfair sub-scales (#4, #11, & #20) as one factor (named unfair/ caregiving) and 6 items (#1, #3, #6, #13, #22, & #29) from the instrumental sub-scale were retained as a second factor.

Kline advocates Kenny’s practice of using only a few very germane indicators: “Kenny’s rule of thumb about numbers of indicators is apropos: ‘Two might be fine, three is better, four is best, and anything more is gravy’ ” in the context of conducting CFA (Kline, 1998, p. 274). For the reduced two-factor model with 13 items, the reliability coefficients (Omega) for instrumental parentification were .90, .88, .77 and .83 and those for unfair/ caregiving parentification .89, .90, .85 and .86, respectively for U.S. males, U.S. females, Koreans males and Korean females. This model fit the data moderately well (RMSEA = .06; CFI = .975; TLI = .978; \( \chi^2 = 701.37, df = 359, p = .000 \)). The significant \( \chi^2 \) value is acceptable because \( \chi^2 \) is dependent on the sample size and is often significant with larger sample sizes (Hoyle, 1995).

Upon further data exploration, the correlations of two-indicator constructs, i.e. instrumental and unfair/ caregiving, were highly correlated (.95 for U.S. males, .85 for U.S. females, .83 for Korean males, and .85 for Korean females), indicating they likely were one construct for the data in this study. In addition, measurement invariance tests showed that the items that measured instrumental parentification were non-invariant (\( \chi^2_{dif} = 51.69, df_{dif} = 15, p = .00 \)), while the majority of the items that measured unfair/ caregiving parentification were invariant (\( \chi^2_{dif} = 25.25, df_{dif} = 16, p = .07 \)). Non-invariant measurement biases the comparability of the relations of latent constructs across groups (McArdle, & Nesselroads, 1994). Given the high correlations of the two constructs, the fact that the items measured differently across the groups (measurement non-invariance), and the principle of reductionism and parsimony of scientific research, the instrumental subscale was dropped in the subsequent structural equation
modeling as predictors of depression. The factor structure, factor loadings of the retained items, and the invariance test results for the parentification measure used in the final model are presented in Table 1. Those items with non-invariant factor loadings, as identified by $\chi^2$ difference test of model comparisons, are bolded in the table. These items were allowed to be freely estimated across the four groups in the final model.

**Self-care.** The CFA regarding the 24 self-care items as indicators of a latent variables showed that the model was a poor fit to the data (RMSEA = .10; CFI = .93; TLI = .94). With this baseline model, invariance tests were conducted across the groups using $\chi^2$ difference tests. Only partial invariance was observed ($\chi^2_{\text{dif}}=23.93$, $df_{\text{dif}} = 19$, $p = .20$). Those items with significant $\chi^2$ differences were allowed to be freely estimated across the four groups in the final model. Next, those items with primary factor loadings less than .40 were eliminated.

Twelve items (#2, #4, #5, #9, #11, #14, #15, #17, #18, #21, #22, & #23) were retained and used in the final model. The final model fit the data moderately well (RMSEA = .06; CFI = .98; TLI = .99; $\chi^2=584.41$, $df = 313$, $p = .00$). The factor structure, factor loadings of the retained items and the invariance test results of the parentification measure used in the final model are presented in Table 2. The reliability (Omega) coefficients were .95, .94, .93 and .83 for U.S. males, U.S. females, Koreans males and Korean females respectively.

**Depression.** The 11-item depression measure was tested for construct validity across all four groups using the same procedures that were used with the other latent variables. The resulting model did not fit the data well (RMSEA = .12; CFI = .81; TLI = .82). Subsequently, the two reverse-scored items (#5 & #8) were eliminated, as indicated by modification indices. The remaining 9 items were retained and used in the final model. A measurement model with items retained from this step served as a baseline model, and invariance testing was conducted across
the groups using a \( \chi^2 \) difference test. Those items with significant \( \chi^2 \) differences were allowed to be freely estimated across the four groups in the final model. The factor structure, factor loadings of the retained items and the invariance test results of the parentification measure used in the final model are presented in Table 3. The final measurement model produced a good fit for the data (RMSEA = .05; CFI = .99; TLI = .99; \( \chi^2 =261.12, df = 158, p = .00 \)). The result of invariance tests produced \( \chi^2=23.29, df = 17, p = .14 \). The reliability (Omega) coefficients were .93, .92, .92 and .91 for U.S. males, U.S. females, Koreans males and Korean females respectively.

**Results**

**Covariates and the Preliminary SEM Model**

The relationship between parentification and depression was examined with a four-group (2 cultures x 2 genders) structural equation model. The dependent variable was depression, independent variables were parentification and self-care. Based on the findings examined in the Literature Review section, age, education, income, marital status and severity of health problems were included as covariates. Age was measured as a continuous variable. Education was measured with the following six categorical levels: no high school diploma, completed high school, some college/ associates degree, 4-year college degree, master’s degree, and Ph.D/ MD. Income was measured with the following 7 categorical levels and the U.S. dollars were converted to corresponding Korean Won at the average exchange rate for the month previous to the fielding date: less than $US 25,000, $US25,000 - $50,000, $US 50,001 - $75,000, $US 75,001 - $US 100,000, $US 100,001 - $US 150,000, $US 151,000 - $US 200,000, and More than $US200,000. Marital status was measured with the following three categorical levels: married, single, divorced/widowed. Severity of health problems was measured on a five-point Likert scale where 1 was mild and 5 was severe.
These covariates showed a significant association with depression for at least one of the 4 groups being tested. Reflecting previous research results that marital attachment is associated with depression (Scott & Cordova, 2002), marital satisfaction was also tested as a covariate but was dropped because the preliminary analysis indicated no significant relationship to depression in any of the four groups. A graphic representation of this model is presented in Figure 1.

To examine whether the impact of parentification on depression depended on the level of self-care in addition to the cultural and gender groups, an interaction term (parentification x self-care) was specified in the model. The multiple group modeling to examine the moderating effects followed the procedures recommended by Frazier, Tix, and Barron’s (2004). Correlations among the covariates were estimated, which were not parameters to be estimated without an explicit request in the Mplus program. Without estimating these, this model would be saturated with no degrees of freedom left to determine model fit indices. Group differences were tested by comparing a model that had all the parameters freely estimated and a model that had an equality constraint, using the Wald Chi-square difference test.

The preliminary results showed that all covariates, except the severity of health problems in the U.S. female group, were not significant predictors of depression in any group. The standardized estimates and the two tailed p-values of significance test results for the main latent variables, as well as all the covariates are presented in Table 4. This model fit the data poorly (RMSEA = .18; CFI = .29; TLI = .22). Subsequently, all covariates, except severity of health problems, were dropped for further modeling to improve the model fit and obtain a parsimonious model. Standardized parameter estimates of the final model, along with the final model fit indices and their 95% confidence intervals (CI), are reported in the results section.
Results for Latent Group Mean Differences

Using the 11-question version of the CES-D Scale questionnaire and the with a clinical cut-off point of 11 (inclusive) out of 33 total points possible to determine depressive symptoms (Chen et al., 1999), 34.6% of Korean sample and 37.7% of the U.S. sample were found to exhibited depressive symptoms. The mean differences in the constructs across culture and gender groups were examined with multi-group CFA. As mentioned in the analysis section, the latent means of the U.S. male group was fixed at zero as the reference. The four-group CFA of the depression measure revealed that latent means of the other three groups were .08 for U.S. females, -.15 for Korean males, and .02 Korean females. Chi-square mean difference tests indicated that U.S. males did not differ from the Korean males ($\chi^2_{\text{dif}} = 1.25$, $df_{\text{dif}} = 1$, $p = .26$), and that the U.S. females did not differ from the Korean females ($\chi^2_{\text{dif}} = .42$, $df_{\text{dif}} = 1$, $p = .52$). Therefore, hypothesis 1 that Koreans would be more depressed than U.S. counterparts was rejected.

Further testing for differences in levels of depression revealed that the U.S. males did not differ from the U.S. females ($\chi^2_{\text{dif}} = .60$, $df_{\text{dif}} = 1$, $p = .44$) and that the Korean males did not differ from the Korean females ($\chi^2_{\text{dif}} = 2.25$, $df_{\text{dif}} = 1$, $p = .13$). Therefore, hypothesis 2 that females would be more depressed than males was rejected. Findings showed that there were no gender or cultural differences in depression.

In terms of parentification, given that the mean of the U.S. male group was set at zero, the other groups’ means relative to this reference point were -.17 for U.S. females, .69 for Korean males, and .44 for Korean females. The Chi-square mean difference tests for the four groups revealed that Korean males’ mean for parentification was much higher than that of U.S. males ($\chi^2_{\text{dif}} = 18.41$, $df_{\text{dif}} = 1$, $p < .001$). Additionally, Korean females’ mean for unfairness was
much higher than that of their U.S. female counterparts as well ($\chi^2_{\text{dif}} = 23.53, df_{\text{dif}} = 1, p < .00$). Therefore, hypothesis 3 that Koreans would be more parentified than U.S. Caucasians was supported.

Further testing revealed that there was no statistically significant difference between U.S. males and U.S. females ($\chi^2_{\text{dif}} = 3.25, df_{\text{dif}} = 1, p = .07$). Additionally, there was no statistically significant difference between Korean males and Korean females ($\chi^2_{\text{dif}} = 1.16, df_{\text{dif}} = 1, p = .28$). Therefore, hypothesis 4 that females would be more parentified than males was rejected.

**Results for Structural Equation Modeling**

The results from structural equation modeling are shown in Table 5. The model fit was excellent (CFI = 1.00, TLI = 1.00, RMSEA = .02). Parentification was positively associated with depression in all groups ($\beta = .17, p < .01$ for U.S. males; $\beta = .20, p < .01$ for U.S. females; $\beta = .11, p < .01$ for Korean males; $\beta = .13, p < .01$ for Korean females). Hence, hypothesis 5 that parentification would be associated with depression for all groups was supported. Results also revealed that self-care was negatively related to depression in all four groups ($\beta = -.57, p < .001$ for U.S. males; $\beta = -.61, p < .001$ for U.S. females; $\beta = -.43, p < .001$ for Korean males; $\beta = -.52, p < .001$ for Korean females). Therefore, hypothesis 6 that self-care would be negatively related to depression was supported.

As can be seen in Table 5, the interaction term was not significant, and so self-care was not a significant moderating variable for any of the groups ($\beta = -.04, -.05, -.02$ and -.03 respectively for U.S. males, U.S. females, Korean males, and Korean females). Therefore, hypothesis 7 that self-care would moderate the relationship between parentification and depression would not be supported. As shown in Table 5, the $R^2$ values for explaining the variance in depression were .37, .47, .21 and .31 respectively for U.S. males, U.S. females,
Korean males, and Korean females.

However, that self-care did not moderate the relationship between parentification and depressive symptoms was puzzling and contrary to theoretical expectations that self-care would be a moderating variable. To further explore the data, the individual slopes (regression coefficients) from unfair parentification to depressive symptoms were examined in small groups. It appeared that there could be differences in the pattern for a small group of participants. To determine if there were different classes of participants based on the pattern of relationship between parentification and depressive symptoms, latent class mixture modeling (Muthén & Muthén, 2012) was used.

**Results from Mixture Modeling**

Mixture modeling was conducted to see if the moderating effect of self-care existed in sub-populations. Mixture modeling can extract the relationship between latent classes and external variables (covariates) simultaneously identifying unobserved classes (Magidson & Vermunt, 2004).

For model fit comparison purposes, six models were run: one-class model, two-class model and three-class model separately and then with covariates. The model fit indices from all of the 6 models (3 classes x 2 covariate inclusion options) are shown in Table 6. The one-class model was used only for comparison purposes and excluded from further modeling because, as indicated earlier, significant moderation was not found in that model. Bayesian Information Criterion (BIC) performed better than other information criteria in comparing models, with a smaller BIC indicating better fit (Collins, Fidler, Wugalter, & Long, 1993; Hagenaars & McCutcheon, 2002; Magidson & Vermunt, 2004), and lower values indicate a better fit. The two-class model fit the data better than the three-class model as evidenced by BIC (3964.36 vs. 47.01).
3987.90 for the one-covariate model; 4037.81 vs. 4091.62 for the all-covariate model) and entropy (.84 vs. .74 for one-covariate model; .84 vs. .70 for all-covariate model). In addition, the two-class model was cleaner and easier to interpret than the three-class model in terms of two distinct classes, the minority class (Class I) with 4.7% of the samples and the majority class with 95.3% (Class II) of the samples. In contrast, the three-class model divided the samples into 11.3% in class I, 10.9% in class II and 77.8% in class III. Based on these findings, the model with two distinct classes appeared to be the best model.

To provide insight on whether a one-covariate (the severity of health problems) model or an all-covariate model would fit the data better, mixture modeling for both scenarios was performed. The one-covariate model was found to fit the data better than the all-covariate model (AIC = 3861.28; BIC = 3964.36; \( \Delta \text{BIC} = 3897.66 \) for one-covariate model vs. AIC = 3875.82; BIC = 4037.81; \( \Delta \text{BIC} = 3933.00 \) for all-covariate model).

The smaller group, Class I (n=56), consisted of those for whom self-care increased the effects of parentification on depression (\( \beta = .41, .29, .11, \) and .16 respectively for U.S. males, U.S. females, Korean males, and Korean females; \( p < .001 \) for all groups), whereas the larger group, Class II (n=945), consisted of those for whom self-care decreased the effects of parentification on depression (\( \beta = -.07, -.09, -.03, \) and -.05 respectively for U.S. males, U.S. females, Korean males, and Korean females; \( p < .001 \) for all groups). Given these two classes, it appears that for the majority (94.4%) of the sample, hypothesis 7 that self-care would moderate the effects of parentification on depression is supported. The standardized estimates, 95% confidence intervals, R\(^2\), model fit indices, and \( p \)-value significance of the final two-class moderation model is presented in Table 7.

Further investigations revealed additional differences between these two classes: for
Class I, 1) self-care was NOT associated with depression for any of the 4 groups ($\beta = .28, .31, .15, \text{ and } .18; \ p = .48, .50, .50, \text{ and } .50$, respectively for U.S. males, U.S. females, Korean males, and Korean females), 2) parenfitication was NOT associated with depression for any of the 4 groups ($\beta = .28, .31, .15, \text{ and } .18; \ p = .09, .10, .14, \text{ and } .14$, respectively for U.S. males, U.S. females, Korean males, and Korean females), and 3) the severity of health problems was significantly associated with depression in all of the 4 groups ($\beta = -.14, -.28, -.05, \text{ and } -.12; \ p = .04, .02, .04, \text{ and } .04$, respectively for U.S. males, U.S. females, Korean males, and Korean females).

In contrast, for Class II 1) self-care was negatively associated with depression for all of the 4 groups ($\beta = -.69, -.72, -.51, \text{ and } -.60$ respectively for U.S. males, U.S. females, Korean males, and Korean females; $p < .001$ for all groups), 2) parenfitication was positively associated with depression for all of the 4 groups ($\beta = .16, .18, .10, \text{ and } .12$ respectively for U.S. males, U.S. females, Korean males, and Korean females; $p < .001$ for all groups), and 3) the severity of health problems was NOT associated with depression in any of the 4 groups ($\beta = .02, .02, .01, \text{ and } .01$ respectively for U.S. males, U.S. females, Korean males, and Korean females; $p = .52$ for all groups). A graphic illustration highlighting the differences between the two classes in terms of the mean latent factor scores of depression, parentification, self-care, and the severity of health problems from mixture modeling is provided in Figure 2. Further examination of the means of the variables of the two classes showed that the depression levels of Class I (mean = -.32, -.70, -.54, and -.44 respectively for U.S. males, U.S. females, Korean males and Korean females) were lower than those of Class II (mean = .06, .12, -.03, and .06 respectively for U.S. males, U.S. females, Korean males and Korean females). Two-tailed t-tests of means revealed that mean depression levels between the two classes were significantly different for all groups ($p$
= .02, .00, .00, and .00 respectively for U.S. males, U.S. females, Korean males and Korean females). However, the mean parentification levels for the two classes were not significantly different in any of the groups (p = .06, .47, .51, and .66 respectively for U.S. males, U.S. females, Korean males and Korean females). In addition, the mean self-care levels were significantly different between the two classes for both female groups (p = .01 for both groups) but not for male groups (p = 1.00 for U.S. males; p = .16 for Korean males). The mean levels of the severity of health problems were not significantly different between the two classes in any of the groups (p = .73, .19, .05, and .59 respectively for U.S. males, U.S. females, Korean males and Korean females). The latent mean scores, standard deviations, and the mean difference test results of the four variables used in the final model for both classes are presented in Table 8.

Further examination of other demographic variables for the two classes revealed that a higher percentage of Korean males and females in Class II were divorced compared to those in Class I (Class I mean = 0.00 for both Korean males and females; mean = .05 in Class II for both Korean males and females; p = < .001). However, no consistent pattern was observed that distinguished the two classes in terms of any of the other covariates including income, education, age, and the number of children.

The R² values indicated a good portion of the variance in depression was explained by this model in Class II (R² = .54, .59, .29 and .42 respectively for U.S. males, U.S. females, Korean males, and Korean females; p < .00 for all groups). In Class I, however, this model explained very little of the variance in depression, especially in the Korean samples (R² = .36, .28, .03, and .06, respectively for U.S. males, U.S. females, Korean males, and Korean females).
Discussion

The current study found no measurable differences in depression between South Koreans and Caucasians in the United States and no measurable differences in depression between males and females. Koreans also reported more parentification than U.S. Caucasians, and contrary to expectations, there were only differences in parentification between males and females in Korea, not in the U.S.

It appears that while there were no gender differences in parentification in either culture, there were significant culture differences with Koreans experiencing higher parentification. Parentification in childhood was related to depression in adulthood, and, as expected, self-care decreased the effects of parentification on depression for the majority (approximately 94%) of the participants in all four groups. However, the finding that the sample contained a smaller latent class where the relationships between these variables were different was a surprise.

The Importance of Self-Care

These findings seem to suggest that those people with adverse childhood experiences could benefit from taking self-care measures to mitigate the negative effects of parentification. The discovery that individuals who are parentified can successfully utilize self-care strategies for better mental health is consistent with other research findings where internal locus of control moderated the effects of life stressors on depression (Johnson & Sarason, 1978; Sandler & Lakey, 1982). These findings are also similar to the finding that external locus of control is associated with depression across all cultures (Cheng et al., 2013) and other research findings that guided self-help was effective for treating depression (Seekles et al., 2011).

Two Classes of People Across Cultures and Gender

For a small percentage of the sample (approximately 6%) across all four groups, self-care
appeared to worsen the relationship between parentification and depression. In other words, for those in this group, if one was parentified during childhood, the more self-care measures he/she reported, the higher the depressive symptoms. These findings raise the question about why this small group was insulated from the beneficial moderating effect of self-care on the association between parentification and depression. Severity of health problems was the only significant predictor of depression for this group. Those in this group were less depressed than those in Class II, even though they engaged in a lot less self-care measures than those in Class II. A possible explanation may be that they have somehow developed more resilience which buffers them against the stress of being parentified during childhood. It may be that they have a higher internal locus of control and strong self-esteem, which diluted any negative influences of parentification. It may also be that they do not need to engage in as much self-care since they are resilient and may have a stronger social support network, which buffers the effect of parentification on depression. Another explanation might be that those in the larger group (Class II) were more susceptible to the negative effects of parentification even though there was no difference in their assessment of the level of parentification compared to that of the smaller group. It might also be that those in Class I are much more affected by their health problems so that a slight change in the severity of health problems has a larger impact on depression. Finally, it is possible that the more self-care measures those in Class I take, the more they might become aware of the negative parentification experiences, which then leads to depression. Findings in other studies lend some support to these possible explanations. Dumont and Provost (1999) found that 16% of their adolescent sample were much more resilient and experienced low depressive symptoms even in the face of high perceived stress. They classified adolescents into three groups based on resilience (well-adjusted, resilient, and vulnerable). The resilient
adolescents showed a higher level of self-esteem, strong social support network and activities, and high personal resources such as optimism and problem solving skills. The same researchers also postulated that a positive personal perception and a strong internal locus of control guarded against the negative impact of stressful life environments.

**Parentification and Depression**

The finding that parentification is significantly associated with depression is consistent with previous research (Hooper et al., 2012; Willert, 2003; Williams & Francis, 2010). However, the contribution this current study makes is the findings that self-care moderates the relationship between parentification and depression across cultures and genders, parentification is associated with depression across cultures and among those in much broader age range (from 18-55), instead of adolescents and college students as was the case in most previous studies. As noted earlier, there are only a handful of cross cultural studies comparing Koreans living in South Korean with U.S. Caucasians.

The finding that Koreans were more parentified than U.S. Caucasians is somewhat inconsistent with previous research findings that concluded there is no significant ethnic difference in the levels of parentification (Castro et al, 2004; Stein et al, 2007; Tomkins, 2007). However, the samples from these studies were different from the current study in many aspects: (1) the samples all resided in the U.S. and Asians were a small fraction of the total, (2) their sample sizes were smaller (n=307, 43 and 213 respectively), (3) the samples were college students or young adults whereas the sample in the current study was composed of adults across the life span. The current study is the first of its kind to clearly delineate parentification, depression, and their relationship as moderated by self-care using a Korean native sample and a Caucasian U.S. sample.
The finding that native Koreans were more parentified than U.S. Caucasians may be attributable to the prevalent Confucianism-based belief that filial piety, which dictates that a child should honor, respect, support and be obedient to parents (Han, 1996) and that children take care of the parents both emotionally and physically (Ng, Phillips and Lee, 2002). There is an unspoken Confucian expectation that parents give children mercy (ja: 慈) and children give parents filial piety (hyo: 孝) in Korean society (Choi (최인재), 2005). Hyo is an absolute value in Korea, which transcends time because it is recognizing, loving, and revering the source of your life, your parents (Chang (장재천), 2008). This unquestionable valued placed on filial piety provides a plausible and socially accepted basis for the practice of parentification which may be more prevalent in Korea. It may be that Korean children have different expectations because of the Confucian cultural beliefs and so they view parentification as a normal experience.

**Koreans and Parentification**

Contrary to the initial hypothesis, it was surprising to find that males were more parentified than females in Korea. Some previous studies using U.S. samples found no gender differences in parentification (Peris, Goeke-Morey, Cummings, & Emery, 2008). Others found that females were more parentified than males (Burnett, Jones, Bliwise, & Ross, 2006). One explanation for why males may report more parentification than females in Korea could center around cultural and social expectations in Korea for sons. They are expected to carry the family name to the next generation and to take care of the parents later in life (Ng, Phillips, & Lee, 2002). Furthermore, the Confucian philosophy is deeply rooted in the Korean culture, governing the norm of gender roles and values. One of the seven vices in Confucian values is a woman’s inability to bear a son, in which case she will be shamed and is allowed to be divorced because a daughter is not considered to be a legitimate child who will carry the family name to the next
generation (Lee (이경혜), 1999). This Confucian value system institutionalized privileges to sons in exchange for absolute obedience and caring for the parents. At the same time, it justified mistreatment of women as second class citizens (Ehwa University Center for Research of Korean Women (이대한국여성연구소), 1994). These entrenched cultural values may set the stage for Korean men to be more parentified.

In terms of predictors of depression, of the numerous predictors of depression such as (1) biological and genetics sources (Bornstein et al, 2006); (2) individual traits such as self-esteem (Sowislo & Orth, 2013), physical health (Berkman et al., 1986), personality (Klein et al., 2011), coping style and emotion regulation (Alcalar et al., 2012; Nolen-Hoeksema & Aldao, 2011); (3) environmental influences such as stress (Chan et al., 2013), interpersonal relationships (Beach & Whisman, 2012; Marchand, 2004), education (Scarinci et al., 2002), number of children (McLanahan & Adams, 1987), and marital status (Kessler & Essex, 1982), among others, the current study found that just the three variables of parentification, self-care and the severity of health problems explained over 20% of the variance in depression for all groups ($R^2 = .37, .47, .21,$ and $.31$ respectively for U.S. males, U.S. females, Korean males and Korean females). All of the independent variables in this model have been found to be linked with depression in previous research, as reviewed above (Onken et al., 2007; Jacobson & Greenley, 2001; Deegan, 1993; Willert, 2003; Williams & Francis, 2010; Berkman et al., 1986).

The model is strong (relatively high $R^2$) and parsimonious (3 independent variables) to sharpen our knowledge of depression. It expands our understanding of depression beyond the individual etiologies. The process of parentification is, by definition, inter-generational. The findings of this study justifies, indeed necessitates, the efforts to understand depression in a systemic context.
**Depression and Gender**

The finding that women did not report higher levels of depressive symptoms than men both in the U.S. and in Korea was surprising, given other ample research that established the contrary (Weissman et al., 1996; Culbertson, 1997; Sileo, 1990; Weissman & Olfson, 1995). It is possible that women have gained higher SES, and higher social prominence in recent years than they did two decades ago when these studies were conducted. This is especially true in Korea where women’s empowerment movement in recent years has led to more women with jobs and even to creating the Ministry of Gender Equality and Family [MOGEF] at the presidential cabinet level in 2010 (MOGEF, 2014).

**Explaining Lack of Cultural Differences in Depression**

Another puzzling finding was that U.S. and Korean participants did not report different levels of depressive symptoms, even when Korea has a suicide level 3 times that of the U.S. (World Health Organization, 2008). This finding was puzzling because depression is often a precursor to suicide (Ahn, 2012; Franko, et al., 2004; Westefeld & Furr, 1987). Perhaps an understanding of the different cultural structures of the two countries could provide a possible explanation. In a seminal book on cross-cultural differences, Hofstede (1984) asserted that common fate and interdependence within the in-group is emphasized in collectivist cultures such as Korea, whereas personal fate and independence from the in-group are emphasized in individualistic cultures such as the United States. Homogeneity in group decisions is prevalent in collectivistic cultures where harmony is valued above individual idiosyncrasies, whereas heterogeneity and diversity in decision making is more valued in individualistic cultures (Triandis, McCusker, & Hui, 1990). In a collectivistic culture, individuals are depersonalized and others are not necessarily viewed as individuals with unique attributes and differences but, rather,
as embodiments of a common shared social category (Turner, 1987). United States is typically categorized as an individualistic society, and Korea a collectivistic one (Hundley & Kim, 1997).

From this context, many suicide victims in Korea seem to imitate suicide. Supporting this theory, the emergency medicine team at Dong-A Medical School in Korea found that attempted suicides were statistically higher during the control period when Choi Jinshil, a very popular Korean actress, and Noh Muhyun, a previous president of Korea, committed suicide (Kwon, Lee, & Yoon, 2012). Similar findings on the imitation effect of suicide have been reported by other researchers for samples in Hong Kong and Taiwan (Fu & Yip, 2009). This imitation effect seems to explain at least part of why Korea has almost three-times the suicide rate of the U.S., even though in the current study, the depression levels between the two countries were statistically not different.

Another potential explanation is that suicide in a collectivistic society is viewed as a potentially honorable and virtuous act of self-sacrifice expressing one's duty to the group, which stems from the Confucian teaching that being dutiful, obedient, and loyal to one's group takes precedence over the desires of the individual selves that make up the group (Young, 2002).

“Etic” and “Emic” Perspectives

The findings of this study are interesting in the context of “etic” vs. “emic” perspectives discussed at the beginning of the literature review. Initial invariance testing showed that only one path, from the severity of health problems to depression in U.S. females, was different from the rest of the groups among all the paths from parentification, self-care, and severity of health problems leading to depression. But when Class I was excluded, invariance testing showed relatively similar patterns across cultures and gender.
These findings from invariance testing suggest that the role of palliative self-care on the deleterious effect of parentification on depression is universally applicable regardless of gender and culture. This conclusion seems to render the “etic” approach of cross-cultural study to be more relevant, at least in the family process of parentification leading to depression moderated by self-care. However, both Korean males and females reported more parentification than their U.S. counterparts, which supports an emic perspective that cultural values substantially influence family processes (Pike, 1954). It may be that thinking of these approaches as either-or may set up scholars to miss the fact that both approaches have merit and that studies should focus more on which processes are influenced by cultural values and which ones are not.

**Clinical Implications**

This study presents compelling evidence that individuals can overcome the negative effects of parentification experienced during childhood by employing self-care measures. Clinicians can deliver the message of hope to those whom they serve that they are not doomed to a negative fate just because they were given an unfair childhood, over which they had no control, and that they can indeed determine the direction of their lives as principal agents (Peebles et al., 2007; Renker, 1999). Clinicians can encourage clients to establish strong self-care practices and beliefs, and environments conducive to self-care to overcome the effects of depression.

In terms of treatment, Contextual Family Therapy is a recommended approach because this modality is consistent with the intergenerational nature of parentification. When there is a consistent or severe imbalance in the relationship with parents, the sense of justice is violated, and the resulting lack of trust drives individuals to destructive entitlement or the self-justifying effort to secure such entitlement. Destructive entitlement can be a source of pain by taking the
form of paranoia, hostility, rage, emotional cutoffs, and destructive harm to other individuals (Boszormenyi-Nagy & Krasner, 1986).

When an injury is inflicted in a parent-child relationship, it is tempting for clinicians to dichotomize the parent and child as victimizer and victim. However, doing so grossly underestimates the complexity of intergenerational dynamics and the negative feedback loop in maintaining the painful homeostasis perpetuated by isomorphism across generations. Clinicians need to remember that “relational justice is never served by reductionistic compassion that can identify external contusions in one member of a context but refuse to look for internal injuries among other members who may also be suffering grievously (Krasner & Joyce, 1995, p. 96)”.

Healing from the violation of the family relational ethics would ultimately lead to exoneration of the parents. Exoneration has two components: salvage (insight) and restoration (forgiveness) (Hargrave & Pfitzer, 2003). Restoration involves both (1) exculpation of the parentified self from the inevitable failings and (2) forgiveness of the victimizer with insight and understanding of the transgenerational perpetuation of the injury, which may free an adult child from guilt-laden loyalties, shame, perfectionism, and destructive entitlement (Boszormenyi-Nagy & Spark, 1973). When exoneration is successfully facilitated, current relationships are no longer filtered through the prism of personal pain and felt rejection, the fear of being held captive to a future tainted by the past is lessened, and the potential for the “victimizer” to build trust increases (Hargrave & Pfitzer, 2003; Krasner & Joyce, 1995).

Clinicians can deliver the message of hope that clients are not doomed to a negative fate just because they were given an unfair childhood, over which they had no control, and that they can indeed change how they feel through strong self-care practices and beliefs, and environments conducive to self-care. Clinicians should encourage clients to practice evidence-based self-care
measures such as cognitive coping practices, meditation, reframing, acceptance and self-soothing, recreation and social support (DiTullio & MacDonald, 1999); exercise and stress reduction efforts (Didelez et al., 2000); maintaining mutually supportive relationships (Jenaro, Flores, & Arias, 2007; Ridgway, 1999); and use of humor (Jenaro et al., 2007).

Clinicians also need to look beyond the individual at the complex systemic dynamics in the social environment and in the family to gain a full understanding of the etiology of depression. Individuals interact with each other and the environment in an organic, mutually constructive manner (James, Hater, Gent, & Bruni, 1978). Hence, no longer is it prudent to simply treat an individual isolated from the environment and replant him/her back in the system with its own homeostatic resistance to the changed individual. The interventions developed from this broader angle would be much more robust in treatment of depression.

Despite its deleterious consequences, parentification may be normative and culturally appropriate within Korean families that reflect interdependent and collectivistic cultural values rather than pathology (Wong, 2004). It is important, therefore, for clinicians to avoid pathologizing parentification but to place it in the context of culture and gender. At the same time, educating parents and spouses on the negative consequences of parentification may produce prophylactic results in minimizing the chances of perpetuating destructive entitlement to the next generation.

Questions for Future Research

Perhaps a natural next step in research would be to deepen the understanding of “how” to prevent the inter-generational cycle of parentification. One question future research could address is whether self-care could interrupt negative entitlement so as not to perpetuate the
painful intergenerational pattern of parentification. This question would explore the actual mechanism of change.

Another question to address is what type of self-care measures would be most effective to mitigate the effect of parentification on depression. This question would probably be best answered in a randomized clinical trial study with a control group. As reviewed above, there are numerous “self-care” practices and agency promoting methods in the clinical setting, including mindfulness, meditation and exercise (Segal et al., 2012); guided self-help (Seekles et al., 2011); physical exercise, herbal supplements, self-help books, exposure to sunlight, acupuncture, exposure to negative ions, massage, relaxation, music, hypnotherapy, aromatherapy (Lee & Park, 2007); and daily walking, gardening (Wilson, 2012). Research aimed at establishing the empirical evidence for specific self-care practices would be of great benefit. Based on the findings of this additional research, a more relevant self-care measure that is distinct and separate from the medical model can be developed incorporating the five aspects of self-care as identified in the Literature Review section. Another question is what makes some people more protected from depression even when they were exposed to similar levels of parentification and take less self-care measures. As reviewed above, these people display an incredible amount of resilience despite conditions that would render others much more susceptible to depression. What makes them so resilient? Why are they not subject to depression when others in similar situations do develop depression? Understanding the answers to these questions would help clinicians to re-create these buffering conditions for the clients struggling with depression.

Limitations

The current study had several limitations. It is cross-sectional and so caution should be exercised in assuming predictive relationships among variables. For example, it may be that
depressed adults view the family processes in their family-of-origin through more negative lens. This may result in them viewing what their parents did more negatively. Additionally, the Internet sampling method used in this study may have contributed to a selection bias that excluded individuals who are less likely to use the internet. The self-care measure was not comprehensive enough to cover many of evidence-based self-care practices such as mindfulness training, meditation and humor. A lack of a good self-care measure with the items that reflect more of agency and practices that are distinct and separate from the medical model of depression was another limitation in the study. In addition, this research relied on self-report, which could produce a response bias for negative items such as parentification and depression, which could be especially problematic in a collectivistic society where respondents hesitate admitting weaknesses in them or finding fault with their parents.

**Conclusion**

The current study found that the relationship between parentification and depression depends on the level of self-care. It also found that parentification and self-care are associated with depression across gender and culture, although Koreans showed a higher level of parentification. Additional findings include that there was no difference in the level of depression between males and females, and Koreans and U.S. Caucasians reported similar levels of depression. These findings suggest that those who were parentified during childhood could take self-care measures to reduce depressive symptoms.
References


66


Muthén, L. K., & Muthén, B. O. BO 2012. Mplus user's guide. Los Angeles, CA.


Table 1. Factor Structure and Factor Loadings of Final Items in Parentification Measure

<table>
<thead>
<tr>
<th>Instrumental:</th>
<th>U.S. Male</th>
<th>U.S. Female</th>
<th>Korean Male</th>
<th>Korean Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1: I did a lot of shopping.</td>
<td>.76</td>
<td>.78</td>
<td>.67</td>
<td>.70</td>
</tr>
<tr>
<td>#3: I helped siblings with homework.</td>
<td>.75</td>
<td>.59</td>
<td>.51</td>
<td>.67</td>
</tr>
<tr>
<td>#6: I was responsible for physical care of someone.</td>
<td>.86</td>
<td>.85</td>
<td>.61</td>
<td>.74</td>
</tr>
<tr>
<td>#13: I often did laundry.</td>
<td>.64</td>
<td>.70</td>
<td>.58</td>
<td>.60</td>
</tr>
<tr>
<td>#22: I was expected to discipline my siblings.</td>
<td>.82</td>
<td>.70</td>
<td>.71</td>
<td>.66</td>
</tr>
<tr>
<td>#29: It was hard to keep up with school due to family work</td>
<td>.79</td>
<td>.82</td>
<td>.55</td>
<td>.69</td>
</tr>
<tr>
<td>Unfair/ caregiving:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#4: couldn't depend on parents to meet my needs</td>
<td>.66</td>
<td>.71</td>
<td>.52</td>
<td>.52</td>
</tr>
<tr>
<td>#11: made sacrifices that went unnoticed</td>
<td>.76</td>
<td>.82</td>
<td>.72</td>
<td>.82</td>
</tr>
<tr>
<td>#20: was more responsible than my parents</td>
<td>.83</td>
<td>.83</td>
<td>.68</td>
<td>.79</td>
</tr>
<tr>
<td>#2: was the only one my mom or dad could turn to</td>
<td>.71</td>
<td>.72</td>
<td>.54</td>
<td>.65</td>
</tr>
<tr>
<td>#12: they always brought problems to me</td>
<td>.79</td>
<td>.90</td>
<td>.84</td>
<td>.76</td>
</tr>
<tr>
<td>#17: parents tried to get to take their side</td>
<td>.77</td>
<td>.65</td>
<td>.64</td>
<td>.61</td>
</tr>
<tr>
<td>#18: I felt very responsible for them</td>
<td>.65</td>
<td>.62</td>
<td>.68</td>
<td>.64</td>
</tr>
</tbody>
</table>

* Bolded items are non-invariant
RMSEA = .06; CFI = .975; TLI = .978; $\chi^2$=701.37, $df$= 359, $p = .000$
Table 2

*Factor Structure and Factor Loadings of Final Items in Self-Care*

<table>
<thead>
<tr>
<th>Item</th>
<th>U.S. Male</th>
<th>U.S. Female</th>
<th>Korean Male</th>
<th>Korean Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>#18: contribute to my community</td>
<td>0.54</td>
<td>0.56</td>
<td>0.47</td>
<td>0.62</td>
</tr>
<tr>
<td>#4: involved in meaningful productive activities</td>
<td>0.75</td>
<td>0.77</td>
<td>0.70</td>
<td>0.71</td>
</tr>
<tr>
<td>#14: have reasons to get out of bed in the morning</td>
<td>0.83</td>
<td><strong>0.80</strong></td>
<td><strong>0.79</strong></td>
<td><strong>0.73</strong></td>
</tr>
<tr>
<td>#15: have more good days than bad</td>
<td>0.90</td>
<td><strong>0.81</strong></td>
<td>0.73</td>
<td>0.80</td>
</tr>
<tr>
<td>#17: control the important decisions in my life</td>
<td>0.72</td>
<td>0.72</td>
<td><strong>0.83</strong></td>
<td>0.80</td>
</tr>
<tr>
<td>#22: feel hopeful about my future</td>
<td>0.84</td>
<td><strong>0.81</strong></td>
<td><strong>0.79</strong></td>
<td><strong>0.78</strong></td>
</tr>
<tr>
<td>#5: symptoms are under control</td>
<td>0.83</td>
<td>0.79</td>
<td>0.74</td>
<td><strong>0.64</strong></td>
</tr>
<tr>
<td>#11: like and respect myself</td>
<td>0.83</td>
<td>0.87</td>
<td>0.73</td>
<td>0.77</td>
</tr>
<tr>
<td>#2: have trusted people I can turn to for help</td>
<td>0.66</td>
<td><strong>0.59</strong></td>
<td>0.68</td>
<td><strong>0.55</strong></td>
</tr>
<tr>
<td>#21: feel alert and alive</td>
<td>0.87</td>
<td>0.91</td>
<td><strong>0.85</strong></td>
<td><strong>0.87</strong></td>
</tr>
<tr>
<td>#23: able to deal with stress</td>
<td>0.79</td>
<td>0.78</td>
<td>0.65</td>
<td>0.75</td>
</tr>
<tr>
<td>#9: in good physical health</td>
<td>0.69</td>
<td>0.72</td>
<td><strong>0.67</strong></td>
<td><strong>0.49</strong></td>
</tr>
</tbody>
</table>

* Bolded items are non-invariant

RMSEA = .06; CFI = .98; TLI = .99; $\chi^2$=584.41, df = 313, p = .00
Table 3

Factor Structure and Factor Loadings of Final Items in Depression

<table>
<thead>
<tr>
<th></th>
<th>U.S. Male</th>
<th>U.S. Female</th>
<th>Korean Male</th>
<th>Korean Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1: didn't feel like eating</td>
<td>.65</td>
<td>.59</td>
<td>.59</td>
<td>.50</td>
</tr>
<tr>
<td>#2: felt depressed</td>
<td>.94</td>
<td>.94</td>
<td><strong>.88</strong></td>
<td>.90</td>
</tr>
<tr>
<td>#3: everything I did was an effort</td>
<td>.70</td>
<td>.68</td>
<td>.80</td>
<td>.69</td>
</tr>
<tr>
<td>#4: sleep was restless</td>
<td>.61</td>
<td>.59</td>
<td><strong>.76</strong></td>
<td><strong>.78</strong></td>
</tr>
<tr>
<td>#6: felt lonely</td>
<td>.84</td>
<td>.88</td>
<td>.79</td>
<td>.80</td>
</tr>
<tr>
<td>#7: people were unfriendly</td>
<td>.65</td>
<td>.60</td>
<td>.59</td>
<td>.57</td>
</tr>
<tr>
<td>#9: felt sad</td>
<td>.93</td>
<td>.96</td>
<td><strong>.86</strong></td>
<td>.91</td>
</tr>
<tr>
<td>#10: felt that people disliked me</td>
<td>.73</td>
<td>.76</td>
<td><strong>.67</strong></td>
<td>.74</td>
</tr>
<tr>
<td>#11: could not get “going”</td>
<td>.73</td>
<td>.75</td>
<td><strong>.80</strong></td>
<td><strong>.74</strong></td>
</tr>
</tbody>
</table>

* Bolded items are non-invariant

RMSEA = .05; CFI = .99; TLI = .993; $\chi^2$=261.12, df = 158, $p = .00$
Table 4

*Standardized Estimates of the Original SEM Model with All Covariates*

<table>
<thead>
<tr>
<th></th>
<th>U.S. Male</th>
<th>U.S. Female</th>
<th>Korean Male</th>
<th>Korean Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Care</td>
<td>-.51**</td>
<td>-.68**</td>
<td>-.45**</td>
<td>-.48**</td>
</tr>
<tr>
<td>Parentification</td>
<td>.21**</td>
<td>.11*</td>
<td>.13*</td>
<td>.23**</td>
</tr>
<tr>
<td>Education</td>
<td>-.09</td>
<td>.04</td>
<td>-.09</td>
<td>-.03</td>
</tr>
<tr>
<td>Number of Children</td>
<td>.03</td>
<td>-.01</td>
<td>.09</td>
<td>.00</td>
</tr>
<tr>
<td>Health Problems</td>
<td>.08</td>
<td>-.10*</td>
<td>.04</td>
<td>.03</td>
</tr>
<tr>
<td>Single</td>
<td>-.01</td>
<td>.01</td>
<td>.13</td>
<td>-.03</td>
</tr>
<tr>
<td>Divorced</td>
<td>.01</td>
<td>-.07</td>
<td>.08</td>
<td>-.04</td>
</tr>
<tr>
<td>Age</td>
<td>-.03</td>
<td>.03</td>
<td>-.03</td>
<td>.01</td>
</tr>
<tr>
<td>Income</td>
<td>.09</td>
<td>-.04</td>
<td>-.06</td>
<td>.02</td>
</tr>
<tr>
<td>Interaction</td>
<td>.04</td>
<td>-.10*</td>
<td>.04</td>
<td>-.02</td>
</tr>
</tbody>
</table>

(Interaction = (parentification x self-care))

* p < .05 ** p < .01, *** p < .001

RMSEA: .18; CFI .29; TLI .22
Table 5

*Standardized Beta Estimates of the Four-Group SEM*

<table>
<thead>
<tr>
<th></th>
<th>U.S. Male</th>
<th>U.S. Female</th>
<th>Korean Male</th>
<th>Korean Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=250</td>
<td>n=251</td>
<td>n=250</td>
<td>n=250</td>
</tr>
<tr>
<td>Self-Care</td>
<td>-.57 [-.62, -.51]**</td>
<td>-.61 [-.67, -.55]**</td>
<td>-.43 [-.48, -.38]**</td>
<td>-.52 [-.57, -.46]**</td>
</tr>
<tr>
<td>Parentification</td>
<td>.17 [.11, .22]**</td>
<td>.20 [.14, .27]**</td>
<td>.11 [.07, .14]**</td>
<td>.13 [.09, .17]**</td>
</tr>
<tr>
<td>Health Problems</td>
<td>.05 [-.03, .13]</td>
<td><strong>.01 [-.19, -.01]</strong></td>
<td>.03 [-.02, .07]</td>
<td>.03 [-.02, .08]</td>
</tr>
<tr>
<td>Interaction◊</td>
<td>-.04 [-.09, .02]</td>
<td>-.05 [-.11, .02]</td>
<td>-.02 [-.04, .00]</td>
<td>-.03 [-.06, .01]</td>
</tr>
<tr>
<td>R²</td>
<td>.37**</td>
<td>.47**</td>
<td>.21**</td>
<td>.31**</td>
</tr>
</tbody>
</table>

** p<.01; * .01< p < .05
◊ Parentification x Self-care
[ ] 95% confidence interval
**Bolded** indicates non-invariant
RMSEA .02, CFI 1.00, TLI 1.00
Table 6

*Model Fit Indices by Class and Covariate*

**With one covariate (severity of health problems):**

<table>
<thead>
<tr>
<th></th>
<th>Log Likelihood</th>
<th>Number of Parameters</th>
<th>AIC</th>
<th>BIC</th>
<th>Adjusted BIC</th>
<th>Entropy</th>
</tr>
</thead>
<tbody>
<tr>
<td>One class</td>
<td>-1931.37</td>
<td>12</td>
<td>3886.74</td>
<td>3945.64</td>
<td>3907.53</td>
<td>1.00</td>
</tr>
<tr>
<td>Two classes</td>
<td>-1909.64</td>
<td>21</td>
<td>3861.28</td>
<td>3964.36</td>
<td>3897.66</td>
<td>.84</td>
</tr>
<tr>
<td>Three classes</td>
<td>-1890.32</td>
<td>30</td>
<td>3840.64</td>
<td>3987.90</td>
<td>3892.62</td>
<td>.74</td>
</tr>
</tbody>
</table>

**With all covariates:**

<table>
<thead>
<tr>
<th></th>
<th>Log Likelihood</th>
<th>Number of Parameters</th>
<th>AIC</th>
<th>BIC</th>
<th>Adjusted BIC</th>
<th>Entropy</th>
</tr>
</thead>
<tbody>
<tr>
<td>One class</td>
<td>-1930.40</td>
<td>18</td>
<td>3896.81</td>
<td>3985.17</td>
<td>3928.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Two classes</td>
<td>-1904.91</td>
<td>33</td>
<td>3875.82</td>
<td>4037.81</td>
<td>3933.00</td>
<td>.84</td>
</tr>
<tr>
<td>Three classes</td>
<td>-1879.70</td>
<td>48</td>
<td>3855.40</td>
<td>4091.62</td>
<td>3938.57</td>
<td>.70</td>
</tr>
</tbody>
</table>
Table 7

Standardized Estimates of Final Mixture Model: Self-Care Moderating Between Parentification and Depression

<table>
<thead>
<tr>
<th>Class I:</th>
<th>Class II:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>U.S. Male</strong></td>
<td><strong>U.S. Male</strong></td>
</tr>
<tr>
<td><strong>n=21</strong></td>
<td><strong>n=229</strong></td>
</tr>
<tr>
<td><strong>Self-Care</strong></td>
<td><strong>Self-Care</strong></td>
</tr>
<tr>
<td>.11 [-.20, .42]</td>
<td>-.69 [-.75, -.64]**</td>
</tr>
<tr>
<td>Parentification</td>
<td>Parentification</td>
</tr>
<tr>
<td>.28 [-.04, .61]</td>
<td>.15 [0.09, .23]**</td>
</tr>
<tr>
<td>Health</td>
<td>Health</td>
</tr>
<tr>
<td>-.14 [-.27, -.00]*</td>
<td>.02 [-.05, .09]</td>
</tr>
<tr>
<td>Interaction◊</td>
<td>Interaction◊</td>
</tr>
<tr>
<td>.41 [.24, .58]**</td>
<td>-.07 [-.13, -.02]**</td>
</tr>
<tr>
<td>R-sq</td>
<td>R-sq</td>
</tr>
<tr>
<td>.36*</td>
<td>.54**</td>
</tr>
</tbody>
</table>

| **U.S. Female** | **U.S. Female** |
| **n=14** | **n=237** |
| **Self-Care** | **Self-Care** |
| .10 [-.19, .39] | -.72 [-.77, -.66]** |
| Parentification | Parentification |
| .31 [-.06, .67] | .18 [.10, .26]** |
| Health | Health |
| -.28 [-.52, -.05]* | .02 [-.03, .06] |
| Interaction◊ | Interaction◊ |
| .29 [.14, .44]** | -.09 [-.16, -.03]** |
| R-sq | R-sq |
| .28* | .59** |

| **Korean Male** | **Korean Male** |
| **n=10** | **n=240** |
| **Self-Care** | **Self-Care** |
| .07 [-.14, .28] | -.51 [-.56, -.45]** |
| Parentification | Parentification |
| .15 [-.05, .34] | .10 [.05, .14]** |
| Health | Health |
| -.05 [-.09, -.00]* | .01 [-.03, .05] |
| Interaction◊ | Interaction◊ |
| .11 [.05, .17]** | -.02 [-.04, .00]** |
| R-sq | R-sq |
| .03 | .05 [-.03, .05] |

| **Korean Female** | **Korean Female** |
| **n=11** | **n=239** |
| **Self-Care** | **Self-Care** |
| .10 [-.18, .38] | -.60 [-.65, -.54]** |
| Parentification | Parentification |
| .18 [-.06, .41] | .12 [.06, .17]** |
| Health | Health |
| -.12 [-.22, -.01]* | .01 [-.03, .05] |
| Interaction◊ | Interaction◊ |
| .16 [.07, .25]** | -.05 [-.09, -.02]** |
| R-sq | R-sq |
| .06 | .42** |

Entropy = .84; AIC = 3861.28; BIC = 3964.36
** p<.01; * .01< p < .05
[ ] 95% confidence interval
◊ Parentification x Self-Care
Table 8

Latent Means, Standard Deviations and Mean Difference Testing Results for the Variables in the Final Mixture Model

<table>
<thead>
<tr>
<th></th>
<th>Class I:</th>
<th>Class II:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>U.S. Male</td>
<td>U.S. Female</td>
</tr>
<tr>
<td></td>
<td>n=21</td>
<td>n=14</td>
</tr>
<tr>
<td>Problems</td>
<td>.24 [.77]</td>
<td>.79 [1.67]</td>
</tr>
</tbody>
</table>

*standard deviation; bolded items: significantly different between two classes
Figure 1

Hypothesized Model

Covariates:
- Age
- Education
- Number of Children
- Marital Status
- Health Problems
- Income
Figure 2

*Latent Means of Depression, Parentification, Self-Care and Severity of Health Problems by Class*

Class I

Class II

Legend:
- Depression
- Parentification
- Self-care
- Health Problems

US Male (n=21)
US Female (n=14)
Korean Male (n=10)
Korean Female (n=11)
US Male (n=239)
US Female (n=27)
Korean Male (n=240)
Korean Female (n=239)