PREDICTORS OF HELP-SEEKING AMONG COMMUNITY-DWELLING KOREAN AMERICAN WOMEN WITH URINARY INCONTINENCE

by

Youngmi Kang

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A Dissertation Submitted to the Faculty of the

COLLEGE OF NURSING

In Partial Fulfillment of the Requirements
For the Degree of

DOCTOR OF PHILOSOPHY

In the Graduate College

THE UNIVERSITY OF ARIZONA

2007
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Youngmi Kang
ACKNOWLEDGEMENTS

This dissertation would have not happened without the support of many people. I would like to thank the Korean American women and the Korean community in Arizona. I would like to acknowledge Dr. Linda R. Phillips, my dissertation chair, who consistently supported me and provided her knowledge and direction to my completing this dissertation. Her comments and suggestions helped me in organizing my thoughts and making the best decisions for how to progress. I thank my advisor, Dr. Judith A. Berg who guided me in finishing all the coursework. Also I would like to thank Dr. Neva L. Crogan who was supportive during my PhD journey. Special thanks should be given to my friend, Dr. Beverly Rosenthal. She read my papers and her thoughtful suggestions were helpful in reorganizing the structure of the urinary incontinence research. My deepest appreciation is given to my family and friends. Lastly, I thank God who guided me in reaching my destination.
DEDICATION

This dissertation is dedicated to my mother, Malju Kim and father, Byungdae Kang.
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ABSTRACT

The purpose of this study is to develop a better understanding how the social and cultural constructions of UI influences aging Korean American women’s help-seeking behavior (HSB). Specific aims are to test the psychometric properties of newly translated Korean versions of instruments and test a conceptual framework derived from a systemic perspective.

This study uses a cross-sectional correlation descriptive design to understand relationships among predisposing (culture, health beliefs, and social structure), enabling (family and community resources), and need factors (perceived need) within the framework of socio-structural and cultural context. A sample of 149 Korean American women with UI was recruited from local religious organizations in Arizona. Data analysis includes descriptive statistics and multiple regression to test the conceptual framework.

The results of research question one showed that reliabilities of the four newly translated measures and a validity of the Social Support Scale were appropriate to measure HSB among Korean target population. Results of research question two indicated that 35.8% of explained variance in HSB was explained by the conceptual framework. Significant predictors of HSB were severity of UI, Incontinence-quality of life (QOL) and social support. The results of research question four showed that there are moderator effects of enabling factors (health care support and social support) on perceived need (severity of UI and Incontinence-QOL) to facilitate seeking help.
It is noteworthy that the notion of UI among Korean American women was influenced by social and cultural construction. Particularly, collectivism of social construction and ageism, and fatalism of cultural construction of UI has permeated to Korean women’s beliefs about incontinence.
CHAPTER ONE: INTRODUCTION

Urinary incontinence (UI) is a problem affecting many aging women from diverse ethnic backgrounds. It is noteworthy that help-seeking for UI is lower among ethnic minorities than among the general population in the U.S (Novielli et al., 2003; Sampselle et al., 2002). This study focused on the members of one such group, the growing population of Korean American women with UI. Asian Americans, including Korean Americans, are among those groups with disproportionately low levels of access to health care access (Ku & Matani, 2001).

Help-seeking behavior (HSB) was defined as a decision of an individual to do something about a symptom or distress (Leigh & Reiser, 1992). Help seeking is complex and characterized by efforts that unfold in socio-environmental and situational contexts. In such contexts, help seeking is influenced by multiple factors, many of which have a significant impact on the outcomes of actions (Koldjeski et al., 2004). A number of factors may influence Korean women’s failure to seek help in managing UI. Understanding social and cultural factors that influence HSB among women with UI is important and fundamental because they may deter or delay women from receiving timely, appropriate health care for UI. No study has been conducted to explore the social and cultural construction of UI among Korean women as it affects UI care for this population.

The purpose of this study was to develop a better understanding how the social and cultural constructions of UI influence aging Korean American women’s HSB. Social construction on help-seeking for UI is rooted in the collectivist nature of Korean culture
which makes UI a family, rather than an individual problem. The cultural construction of UI is related to values in Korea related to sexism, ageism, shame, and fatalism. Better understanding of these two constructions will help health professionals identify facilitators and barriers to help-seeking in this group.

This study had two specific aims. First, the study was designed to assess the reliability and validity of newly translated instruments about help-seeking for UI from English into Korean versions. Currently, there are no valid or reliable translated instruments (Korean language) to measure Korean American women’s propensities or desires to seek help for UI. Second, the study was designed to test an adapted theoretical model derived from a systemic perspective, the Behavioral Model for Vulnerable Populations (Gelberg, Andersen, & Leake, 2000) to predict HSB for UI. From a review of the social and cultural construction of UI, a theoretical model was proposed and the proposed model was tested in this study. In this chapter the following areas will be addressed: 1) statement of problem, 2) background, 3) statement of significance, 4) statement of purpose, 5) research questions, and 6) a summary.

Statement of Problem

Called the ‘silent epidemic,’ UI is not a life threatening condition, but it is a formidable problem affecting women of all cultural groups. It has significant physical, psychological, social, and economic consequences for women’s health-related quality of life. In the United States and other industrialized countries, sensitive topics, such as UI and sexual dysfunction, now are discussed more openly among younger adults (Dugan et al., 2001). However, women suffering from UI are still stigmatized and marginalized in
societies because of its social and cultural constraints (Ashworth & Hagan, 1993). In 2002, the International Continence Society defined incontinence as the complaint of any involuntary leakage of urine (Abrahms et al., 2002). UI can be operationally defined as any involuntary urine leakage regardless of frequency, amount of loss and type of incontinence.

Numerous studies have been conducted to investigate the prevalence of UI in the U.S and the UK. The prevalence of UI varies based on definitions of UI and research methodology. According to a meta-analysis reviewing 13 studies, the prevalence ranged from 3% to 53% in 35-44 year olds (Minassian et al., 2003). A 1999 World Health Organization/International Continence Society Report concluded that among women living in the community there is an increasing prevalence of UI during young adulthood (age of 20-39, prevalence 20-30%), a broad peak around middle age (age of 40-59, prevalence 30-40%), and then a steady increase among the elderly (over 70 age, prevalence increasing to 30-50%) (Hunskaar et al., 2002). Some studies have been conducted to investigate the prevalence of UI in ethnic minority women such as African Americans, Hispanics, Mexican Americans, and Latinos. However, little research has been done on the Asian female population in the U.S. except for two studies conducted with a small sample of Chinese or Japanese women (Duong & Korn, 2001; Sampselle et al., 2002).

Based upon studies in Korea, the prevalence of UI in Korean American women may be high. A recent study in Korea indicated that among women the prevalence of UI in ages 30-39 was 36%, 53.9% in ages 40-49, 45.1% in ages 50-59, and 63.3% in
individuals over 60 (Park et al., 2004). The prevalence ranged from 23-71% among middle-aged and elderly women (Kim & Hong, 1993; Lee, 1994; Kim, 1996; Kang, 1996; Back, 1998; Seo, 1999; Shin, 2000; Song, 2001; Park et al., 2004). Exact prevalence estimates are difficult to obtain due to the embarrassing nature of the disorder and the variety of definitions of the disease used in epidemiological studies.

Impressive advances have been made in the pharmacological and surgical management of UI. Despite the availability of effective treatments, however, many aging sufferers manage their conditions silently rather than seeking professional help. Delays seriously impair the effectiveness of treatment regimens and can lead to a worsening of the incontinence. Factors that influence help-seeking for UI are important topics for study as delay in seeking treatment may make interventions and treatments more complicated, more costly and/or less effective.

Previous research on the general population and ethnic minority groups in the U.S. has indicated that women with UI rarely seek health care services although they suffer from its impact. Current research indicated that 13% to 51% of those affected with UI in the general population seek treatment (Roberts et al., 1998; Dugan et al., 2001; Mason et al., 2001; Ricci et al., 2001; Kinchen et al., 2003). Current research on seeking help indicated that seeking UI treatment was even less common among ethnic minorities compared to the general population in the U.S. (Sampselle et al., 2002; Novielli et al., 2003). This might be true for all ailments as well and an indication of their not using health care services in general. Novielli and colleagues (2003) reported a low rate of HSB in African American women (39%) compared with whites (52%). In a similar study,
Sampselle and colleagues (2002) reported that the percentage of whites (13.7%) who discussed UI with health care providers was higher than for African Americans (12.5%), Japanese (10.2%), Hispanics (7.8%), and Chinese (5.6%).

Research shows numerous variables affect HSB of U.S. women with UI (Johnson II et al., 1998; Hägglund et al., 2003; Peters et al., 2004). Several studies reported that minority women with UI particularly hesitate to seek professional health care possibly due not only to health beliefs and attitudes about UI but also to social and cultural constraints in the U.S and U.K. (Rizk et al., 1999; Dugan et al., 2001; Mason et al., 2001; Walters, Iliffe, & Orrell, 2001; Kinchen et al., 2003; Minassian, Drutz, & Al-Badr, 2003; Horrocks et al., 2004). However, specific variables that influence HSB have not been reported nor has a theoretical model been tested that posits how these variables interrelate. Therefore, there is a lack of understanding regarding HSB in minority women with UI. In this section, previous studies on HSB in both the general population and ethnic minority groups in the U.S. will be reviewed.

Previous studies on help-seeking in both the general population and ethnic minority groups with UI can be categorized in two general areas; facilitators and barriers or reasons that interfere with women seeking help. In the general population as well as in minority groups, facilitators and barriers to help-seeking include biological factors and individual factors (Johnson II et al., 1998; Kim, 2001; Sampselle et al., 2002; Hägglund et al., 2003; Novielli et al., 2003; Kubik, Blackwell, & Heit, 2004; Peters et al., 2004). Biological factors are facilitators to seeking help and individual factors act as barriers.
In general, the most commonly reported biological risk factors of UI in both the general population and minority groups in the U.S. are age, gender, child birth, menopausal status, hysterectomy, and urinary tract infection (Holroyd-Leduc & Straus, 2004). The severity of UI symptoms, duration, and chronic diseases were reported as the most influential factors that led women to seek help.

Individual factors that seem to be barriers to seeking help in both the general population and minority groups include: a) a belief that incontinence is normal and only a minor problem, b) a lack of awareness of available treatment, c) low expectations for treatment effectiveness, and d) shame and embarrassment about UI (Rizk et al., 1999; Dugan et al., 2001; Mason et al., 2001; Walters, Iliffe, & Orrell, 2001; Kinchen et al., 2003; Minassian, Drutz, & Al-Badr, 2003; Horrocks et al., 2004; Bush et al., 2001). Women who have negative attitudes about UI and toward health care providers and less knowledge are less likely to seek help. Women who are embarrassed about UI are reluctant to speak about their UI symptoms to health care providers, family or friends (Hägglund et al., 2003).

Compared to the general population, minority women are less knowledgeable about UI. The National Association for Continence (2002) reported that African American women are less knowledgeable than whites about UI and treatment options. Therefore, they are less likely to speak to their doctor about their problems. Kubik and colleagues (2004) found that both whites and minority women have little knowledge of treatment options. For example, on a knowledge scale for UI with a possible range of 0 to 14, white women scored 6.16 (SD=2.86) while minority women scored 5.46 (SD=2.66).
Bush, Castellucci, and Phillips (2001) reported that minority women were more likely to believe that UI was a normal part of aging and were more open to talking about their conditions than non-minority women.

A few studies have examined socio-cultural or ethnic influences on help-seeking for UI although none was conducted in the U.S. A study in the UK reported that Muslim and Hindu women preferred to discuss UI with a close female relative, while Jewish, Christian, and Buddhist women felt equally comfortable discussing UI with a close relative of either gender (Chaliha & Stanton, 1999). Jewish women were more likely to seek medical advice about their UI, whereas Christians, Muslims, Buddhist, and Hindus cited embarrassment or a belief that incontinence was a normal part of aging as reasons for not seeking medical help. Muslim women preferred consulting a female care provider; Hindus were divided in their preference for a male or female care provider; Christian, Jewish, and Buddhist women reported no preference (Chaliha & Stanton, 1999).

Wilkinson (2001) indicated three factors that prevented Bangladeshi women from accessing continence services including the limited availability of translated information, embarrassment, and the insufficient numbers of female doctors in the UK. No study has been conducted to explain the socio-cultural influence of UI in Asian women in United States. Similar to other ethnic minority women, they may experience difficulty accessing health care services to treat their UI symptoms due to ethnic and cultural barriers as well as knowledge and attitude toward UI.
Most studies about UI in both the general population and among minority women have been guided by the biomedical or epidemiological perspective which focuses on the physical and physiological aspects of UI. This dominant view adds little to the understanding of seeking help for UI which occurs in a whole social context. In addition, no studies on HSB have used theory or theoretical models to guide the study or to organize the data of research results. Without a theoretical framework, research simply focuses on narrow aspects of specific problems rather than on a range of the underlying factors that contribute to the situation (Verran, 1997). Minority women’s HSB is more likely determined by various social contextual and cultural norms than are the general population’s HSB. They may experience more obstacles to accessing health care services. There are unexplored factors such as socio-cultural, organizational or systemic factors that may explain help-seeking among minority women. As a result, a theoretical model is needed to explain this phenomenon with these considerations. Factors that should be considered in a theoretical model will be discussed in chapter two.

Background

The notion of UI in women can be examined from three perspectives: biological, social, and cultural. From the biological perspective, urination and defecation are bodily functions humans share with all living organisms. From a social perspective, UI is linked to questions of social integration and feelings of connectedness in society (Isaksen, 2002). From the cultural perspective among humans, urination and defecation are rendered private and kept hidden from the eyes of others (Isaksen, 2002). Losing control of these functions is associated with losing one’s dignity and human identity because it
makes visible what should be kept private in order to reinforce that humans are different and separate from one another (Isaksen, 2002). The next section outlines the similarities and uniqueness associated with these three perspectives from both the U.S. and Korean standpoints.

**Biological Perspective on UI**

The biological perspective is a functional and behavioral view of UI. Historically, the concept of UI has been constructed from a biological perspective which is dominant in the U.S. and Korea science. Studies have focused on the prevalence, risk factors and treatments for UI. Studies on HSB emphasized the importance of biological risk factors related to help seeking.

Wellard (1998) stated that science has provided the current underlying views of chronic illness and has framed the development of the health professions and their work. The use of the scientific method predominates in the vast body of literature relating to health care as evidenced in the disciplines of medicine and psychology which are grounded in scientific traditions. In Western society there is a predominant belief that science will provide the truth to any problems posed (Wellard, 1998). Initially, UI was explained by physical mechanisms and a biological view. The biological view of UI has been the foundation for most investigations of UI and its consequences for those with UI, their families, health care workers and society.

The biological view of UI has influenced most UI studies. Current medical literature relating to UI still remains directed toward the biological view such as investigation of the pathophysiology of UI and mechanisms for clinical treatment
The medical literature on UI now focuses on protocols for the evaluation and treatment of the incontinent patient with the goal of reversing or substantially improving incontinence (Mitteness & Barker, 1995). Classification schemes for UI focus either on duration or on the pattern of urine loss. A wide variety of treatment strategies based upon biomedical, or epidemiological perspective are used, ranging from correcting underlying disorders to behavioral interventions, drug therapy, and hysterectomy (Watson et al., 2003). Most studies on UI are designed to test the effectiveness of behavioral therapies such as pelvic floor muscle exercise, biofeedback, prompted voiding, and bladder training in women.

This positivist empiricist approach to understanding UI which is dominant in science is limited for exploring how individuals suffer from their UI symptoms. As a consequence, the psychological impacts on individuals with UI in the family, community and society are ignored. Not until 1980 were the psychological impacts of UI such as isolation, stigmatization, depression, self-esteem, and quality of life addressed in UI related literature. This has resulted in the continuation of a predominantly narrow and paternalistic approach toward women with UI (Moore & Paul, 1997).

**Sociological Perspective on UI**

Social construction is defined as a systematic set of beliefs through which a society constructs attitudes, values, etc. toward conditions/illnesses (Hussein, 2005). UI is one area influenced by the constructed beliefs. Rosenberg (1987) observed, “a disease is no absolute physical entity but a complex intellectual construct, an amalgam of biological state and social definition (p.5)” . In socially constructing an illness, symptoms are
identified and the disease is named (Herek et al., 2003). The social nature of illness is particularly evident with a stigmatized disease such as AIDS (Herek, Capitanio, & Widaman, 2003).

Some studies review the social and cultural construction of UI in Western societies such as the U.S., Norway, and Australia (Mitteness, 1987; Mitteness & Barker, 1995; Lock, 1998; Peake & Manderson, & Potts, 1999; Peake & Manderson, 2003; Isaksen, 2002). Despite the pervasiveness of UI in Korea, there has been no research related to its social construction or historical development. Even recently the psychosocial aspects of UI have been the subject of only a few studies (Kang & Song, 1997; Kim, 1998; Kim et al., 1999; Kim, 2001; Kim, 2001).

Basically, UI has been socially constructed from a social survival perspective in both the U.S. and Korea. Researchers have long been aware of the behavioral aspects of UI. At the societal level, continence also has been viewed as a behavior necessary for individual and species survival (Blok & Holstege, 1999). For example, during the act of micturating an individual can be vulnerable to physical attack, thus survival is enhanced if the bladder empties under volitional control when the environment is deemed safe, rather than emptying randomly (Blok & Holstege, 1999). Random micturition also raises hygiene issues. Exposure to excreta is considered disgusting across cultures and it is hypothesized that disgust is an aversion that leads to behaviors designed to protect people from disease (Curtis & Biran, 2001).

UI has been regarded as a social problem rather than a health problem or disease in both the U.S. and Korea. Actually it is a health problem, but maintenance of it is a
social problem (Peake, Manderson, & Potts, 1999). However, American society and Korean society hold different views of UI as a social problem. While UI in the U.S. is grounded in individualism (Mitteness & Barker, 1995; Lock, 1998; Wellard, 1998; Peake, Manderson, & Potts, 1999; Peake & Manderson, 2003), UI is constructed on collectivism in Korea.

**Individualism**

Currently, the social construction of UI is grounded in individualism in the U.S. Individualism in Western societies is based on a denial that we are all alike and have common needs that must be met (Isaksen, 2005). Individualism assumes that individual interests are more important than collective interests, and that individual autonomy is sovereign. Individualism in Western societies has stressed notions of personal freedom, individual rights to self-determination and ownership (Abercrombie, Hill & Turner, 1986). Accompanying the privileges of individualism are obligations to demonstrate responsibility for individual actions. The freedom to self determination becomes tempered by notions of normal behavior, where individuals are expected to conform to societal norms (Wellard, 1998). Within sociological discourse, individualism predominates and can be seen in the focus on the health of individual patients in Western societies.

From a social perspective, individualism as a social construction for UI can be understood as relating to social membership and competency in the U.S. Urination is an act that humans share with our mammalian ancestors. Unlike non-erect mammals, however, the upright posture of humans requires extremely competent urinary sphincter
mechanisms (Adedokun & Wilson, 2004). Bladder training is one of the first things human beings learn after bowel training. Urinary and fecal controls are part of the process of enculturation (Isaksen, 2002). The inability of a person to master these functions, to eliminate only at appropriate times and places, is a symbolic and literal negation of social personhood (Peake, Manderson, & Potts, 1999). The loss of continence in Western society is viewed as a violation of social norms. An individual is obligated to maintain responsibility as a social member by maintaining continence in the U.S.

At the same time, moral opprobrium derived from poor health status, and control of body is essential to social membership (Peake, Manderson, & Potts, 1999). Turner (1987) argues that from the perspective of historical sociology, the construction of categories of disease and deviance appears to be closely related to the problem of the definition of social membership. To be ill or unhealthy is a form of deviance, a lack of bodily control that threatens one’s position in the social structure. All bodies need this control to maintain social membership, but deviancy is even more compelling in the female body (Peake, Manderson, & Potts, 1999). Historically, women’s bodies have been treated as especially threatening to the moral and social stability of human society (Suleiman, 1986).

Despite the fact that urination and defecation are not gender specific functions, women have associated bladder control with gender as well as social membership, albeit in contrary ways. Females suffering from UI tend to link their own continence problems with perceived personal failings such as lack of exercise, being overweight and hence, see their condition as a symbol of their lack of moral worth (Peake, Manderson, & Potts,
It is their own indulgence and inability to impose mind over body. Following this, women’s understanding of the relationship of incontinence to their social membership extends far beyond the difficulties of disguising their physical problems (Mitteness & Barker, 1995; Peake & Manderson, 1999).

Continence is socially linked with competence in U.S society. It is a requisite for adulthood (Mitteness & Barker, 1995). The association of incompetence and incontinence is not intrinsic. It is a social construction, a linking together of various attributes and ideas into a culturally relevant value package (Mitteness & Barker, 1995). Incontinence is portrayed as urethral incompetence, bladder instability, mechanical defect, lack of compliance, and failure (Peake, Manderson, & Potts, 1999). Incontinent people are alleged to be less able, less competent, less attractive, and less desirable companions (Mitteness & Barker, 1995). Even those who are themselves incontinent make negative attributions about and express little sympathy for generalized, anonymous incontinent others whom they do not know, while denying such attributions apply to them personally or to incontinent family or friends (Mitteness, 1987).

Mitteness & Barker (1995) proposed that both the elderly and their health care providers consider incontinence as a sign of incompetence, a cultural symbol for the increasing dependence of old age, much feared and resented in the U.S. UI in old age symbolizes a loss of control that is incompatible with adulthood in the U.S. society. This belief mitigates against the success of preventative and interventative strategies for UI, unless those strategies focus first on disentangling continence and social competence in
the minds of health care providers and the elderly themselves (Mitteness & Barker, 1995).

Collectivism

There is no literature on the social construction of UI in Korea, but caring for a person with UI has been mainly understood from the value of collectivism (familism) rather than individualism. Collectivism, in general, is a term used to describe a theoretical or practical emphasis on the group as opposed to individual. Collectivism states that the good of the group is more important than the good of the individual while others argue that, since any group is ultimately made up of individuals, the individual incidentally serves his own interests by serving the group's interests (Davidson, Jaccard, Triandis, Morales, & Diaz-Guerrero, 1976). In other words, as the group prospers, all members of the group prosper. At the root of this value is the belief that a collective is more than just individuals interacting together. It is the belief that the group is an entity itself, more important than the sum of the individuals (Markus & Kitayama, 1994).

Korean traditional culture has prevented the development of individualism and a sense of self. The Confucian system of ‘familism’ has required that the individual be merged into the family collective. Centuries of conditioning in the concept and practice of collective identity, as opposed to individual identity, has resulted in Koreans failing to develop a clear sense of personal responsibility (Kim, 2002). Although Koreans are assuming more and more personal responsibility in the family, there is little likelihood that collectivism will disappear entirely from the culture in the near future. Sharing responsibility is deeply embedded in Korean character. Responsibility was seen as rooted
in the family or collective, not as a personal or individual matter. The family as a whole is responsible for the conduct of each individual member, particularly when behavior is regarded as immoral or disruptive (Kim, 2002).

From a collectivist perspective, UI has been recognized as a “our problem’ not only one person’s problem. In other words, managing the UI problem in Korea is viewed as a collective responsibility in a family. While the loss of continence has been viewed as a violation of social norms and means social incompetence due to individual failure to maintain urinary function as a social member in the U.S., UI has not been considered a violation of social norms or loss of social competence in Korea. Therefore, an individual who is suffering from UI in Korea is not blamed for their failure of personal responsibility as a social member. To the contrary, if one of the family member losses his/her urine control, the family is considered to be guilty and is subject to punishment. Collective guilt or collective punishment is intended to maintain absolute stability in society.

Caring for a person with UI based on collectivism does not mean UI is recognized as an open issue in a family. Although UI is considered to be a family issue in Korea, a woman suffering from it does so by herself rather than sharing the suffering with family members. Korean family members do not want to reveal their shameful or private problems such as incontinence. They want to abide by the rules that maintain society pursuing harmony in a community (Wink, 1997). In Korea, performing ones family responsibility is important. Therefore, family members are afraid of being blamed by their community when they do not treat their older parents with UI in an appropriate way.
As a result, UI is a family issue that a family should put up with and it is taken for
granted that the family will care for those women who are affected. Interestingly, only
daughters and daughters-in-law have been regarded as primary caregivers regardless of
the gender of affected older person.

**Cultural Perspective on UI**

The cultural construction of a disease is defined as the way we perceive,
experience, and cope with disease based on our explanations of sickness, explanations
specific to the social positions we occupy and systems of meaning we apply to conditions
such as UI (Kleinman, 1975). Fabrega (1972) stated that illness represents personal,
interpersonal, and cultural reactions to disease or discomfort. Illness is shaped by cultural
factors governing perception, labeling, explanation, and valuation of the discomforting
experience, processes embedded in a complex family, social and cultural nexus (Litman,
1974). Because the illness experience is an intimate part of social systems of meaning
and rules for behavior, it is strongly influenced by culture; it is, as we shall see, culturally
constructed (Kleinman, Eisenberg, & Good, 1978).

Adedokun and Wilson (2004) pointed out that despite the remarkable pace of
scientific progress, global cultural and psychosocial attitudes toward incontinent
individuals have been remarkably resistant to change. UI still is a common cause of
frustration, anxiety, decreased social activity, diminished self-esteem, depressive
symptoms, and reduced quality of life among affected persons (Dugan et al., 2001). The
cultural construction of UI in both the U.S and Korea is grounded in sexism, ageism, and
shame, and fatalism in Korea. However, subtle differences exist in each country
regarding these three cultural perspectives. The similarities and differences relating to these cultural perspectives on UI between the U.S and Korea will be discussed in this section.

Sexism

UI has been culturally constructed based upon sexism in both the U.S and Korea. Sexism is commonly considered to be discrimination against people based on their sex rather than their individual merits, but it can also refer to any and all differentiations based on sex (Encyclopedia Britannica, 2007). Murray (1998) and Kittell, Mansfield, and Voda (1998) insist that different ideas about gender emerge from cultural discourse rather than biological necessity, with cultural rules of conduct defining the ways in which men and women act, present themselves and interact.

The concept of normalcy is linked to the construct of a male/female dichotomy (Peake, Manderson, & Potts, 1999). Not all female bodies leak urine. UI is not confined to women of certain ages or child bearing experiences. Men as well as women experience incontinence. Yet the leaky female body is treated as a biological given, and this inappropriate view is perpetuated by women and health professionals (Peake & Manerson, 1999). Understanding how the concept of UI is related to women’ bodies and health can help us understand why UI in women has been disregarded despite its pervasiveness and psychosocial impacts.

Women’s health is defined in cultural terms as both excessive (fertile, menstruating) and deficient (with aging, estrogen deprived) (Peake & Manerson, 1999). Both of these representations raise questions of control and self-regulation. Likewise, the
concept of disease is tied to a notion of universal standards. Medical categories are confused with social categories as biological characteristics are fused with norms in linking female normalcy with reproduction (Peake & Manerson, 1999). In cultural and largely symbolic terms, the reproductive female body is typically cast as excessive by virtue of fecundity (Peake & Manderson, 2003). The social and personal significance of the functioning body is at the heart of the celebration of femaleness within feminist discourse, and in various cultural constructions of womanhood (Peake, Manderson, & Potts, 1999). The body that is partially constitutive of the self menstruates, then ceases to do so (Rice & Manderson, 1996). Women’s health and bodies have been discussed from the perspective of mothering whose role is reproduction. Women’s identities draw from their embodied femaleness. To be a woman is to be a mother because women’s bodies have the capacity to bear and nurture children.

The involuntary or too frequent loss of urine holds a symbolic meaning in Western culture (Mitteness & Barker, 1995; Peake, Manderson, & Potts, 1999; Peake & Manderson, 2003). Women’s bodies transgress their boundaries and are leaky compared to the contained, hard dry bodies of men (Peake & Manderson, 2003). In this representation, it is not relevant that men’s bodies may also leak as a result of incontinence, that fluids overflow, or there is lack of control of emissions (Peake & Manderson, 2003). These are cultural models, therefore ideals informing how men and women are constructed. In this context, men are “feminized” by incontinence (Peake & Manderson, 2003). For women, the dilemma is that a lack of control over body function is consistent with the construction of gender (Peake & Manderson, 2003).
Consistency with the construction of gender is why UI has gotten so little attention until recently. The prevalence of UI in women is twice that in men (Romanzi, 1998). Urinary symptoms such as leakages, frequency and nocturia in women are generally not considered serious, although urinary symptoms in men may be indicative of serious pathology because of their relationship to prostate cancer (Brocklehurst, 1993). Men with UI are significantly more likely than women to be referred to specialist care.

By contrast, in women, UI is seen simply as part and parcel of being a woman (Peake, Manderson, & Potts, 1999). In an analyses of Australian women’s discourse regarding their own incontinence, Peake, Manderson, and Potts (1999) highlights the problem of women and their bodies, the breaches of the body metaphorically reflecting the way in which biology manipulates the social person. Discussions of women’s bodily functions should center on the nexus of biology and social meaning (Peake, Manderson, & Potts, 1999).

Sexism has also influenced views of Korean women’s bodies and health. Medical notions of female embodiment, the links between women and reproduction, and gendered understandings of the body are dominant views of women’s health in Korea (Jang, 2000). Linked to these views, it can be assumed that sexism may be associated with the concept of UI although there is no study about how sexism influences the concept of UI in Korea. This understanding of women’s bodies has affected the cultural construction of UI and UI has not been regarded as a gender specific disease. As a result, sexism in both the U.S and Korea has resulted in the continuation of a predominantly narrow and reproductive approach toward help-seeking among women with UI.
Ageism

The cultural construction of UI in women has been also debated from the point of view of ageism in both the United States and Korea. Aging women arguably comprise the most denigrated and vulnerable strata of modern society (Markson, 1992). Ageist and sexist attitudes and the behaviors of health care professionals reflect societal stereotypes and aversion to aging women (Sharpe, 1995). This sometimes has led to the experience of subtle humiliation when women seek health care.

In contemporary society and popular culture, the aging female body is represented by loss-of youth, sexuality and reproductive function. In biomedical contexts, urogenital aging is characterized by estrogen deficiency, thinning of the epithelium, reduced lubrication, less tonicity, and diminished capacity to close the bladder neck (Peake & Manderson, 2003). Incontinence is about being wet when one is expected to be dry. Incontinence is linked to images of wrinkled and hairy parts of the body, to cavities and clefts, and to old age (Isaksen, 2002). Old age represents an accumulation of undischarged remnants of a lifetime of eating and drinking and is dirtier than youth. For example, chemicals in food are stored in our bodies and might cause cancer in old age. Therefore, growing old means growing dirty. Infants are cleaner than the elderly (Peake & Manderson, 2003).

UI in young people who suffer from spinal cord injury, neurological deficits, or birth defects is aggressively treated to return these young people to their usual social world as soon as possible. UI for a young person is discreditable, but it is not a natural part of young adulthood. Thus, intervention or amelioration is called for (Mitteness &
Barker, 1995). On the contrary, until recently, no such emphasis existed in the literature on the therapeutic management of UI in the elderly. In the social imagination, incontinence in the elderly is linked with frailty, disintegration, incompetence, and a general discrediting of old age.

Incontinence, however, is unusual in that while it is discreditable, it is also considered by many to be a natural part of aging. This linkage of the discreditable with normal aging helps explain the difficulties that many people in the U.S have with aging and the social disadvantages that elderly people experience. Older Americans frequently report fears of becoming dependent or incompetent, in other words, of losing it (Clark & Anderson, 1967; Kalish, 1969). Incontinent elderly people are under a double threat: age alone makes their competence socially suspect, and public knowledge of their incontinence would confirm that suspicion. By not offering the elderly the opportunity for a cure or effective treatment of UI, social institutions reinforce the suspected incompetence of the elderly based on their age. Further, this lack of opportunity for treatment puts incontinent people “on probation”, forcing them to continually prove their competence by effectively hiding from others evidence of their incontinence, of their dependency (Mitteness & Barker, 1995). The cultural construction of UI related to ageism leads women to abandon seeking help for UI. Ageism has resulted in ignoring UI as only an elder’s problem. Since it is a normal part of aging, therefore, women do not seek the health professionals aggressively.
**Ageism and Confucianism**

The meaning of aging depends on culture. Although from a biological perspective, aging is viewed as a loss of youth and physical functions in Korea as well, Korean culture has a unique cultural perspective of aging. A traditional culture of caring for older people with chronic illnesses has been developed from Confucianism. Confucianism is an East Asian ethical and philosophical system originally developed from the teachings of Confucius. In Korea, Confucianism was adopted as the official philosophy of the Yi dynasty (1392-1910) and has developed during its 500-year history.

Confucian concepts of social harmony and moral precepts have permeated the intellectual life of old East Asia and have played a pivotal role in moulding the Korean culture (Tamai & Lee, 2002). Confucianism espouses humanism which is rooted in a philosophy or attitude that is concerned with human beings, their achievements and interests, rather than with the abstract beings and problems of theology. In Confucianism, the human is the center of the universe: humans cannot live alone, but must interact with other human beings.

To further ensure harmony and unity, Confucianism stresses that several concepts are valued above all else in social situations. They are benevolence, righteousness, propriety (or decorum), wisdom and sincerity. Life is guided by five moral imperatives: 1) between ruler and subject, righteousness, 2) between father and son, affinity, 3) between husband and wife, separation of functions, 4) between elder and younger, proper respect, and 5) between friends, fidelity (Kang, 2004). Confucius taught that if everyone
upheld these five basic responsibilities and relationships, social and political order would prevail.

In Korea, ageing means a decline of physiological function, but Confucius taught that age brings wisdom. In all familial relations, respect of parents and grandparents has supreme value. The elderly are considered superiors. As such, near total obedience is given to them by the rest of the family (Yum, 1991). At least in theory, quarrelling, loud talking, smoking, and drinking alcohol are not permitted in their presence. In turn, elders are supposed to treat the younger generation with affection. They are allowed to be strict, but not cruel. The older a person is, the more honoured in his or her place in ancestor worship. Confucius preached that people should always look to the past and the ways of their ancestors as the example for solving contemporary problems (Yum, 1991). People should learn the accumulated experience of their previous generations. Confucius taught, "By reviewing the old, we can learn the new" (Yum, 1991). Individualistic societies, in contrast, do not see knowledge and wisdom as the special province of designated elders.

Fundamental ideas about morality and the proper ordering of human relationships between elder and younger in a family or community are closely associated with the Confucian concept of filial piety. Aging women who are suffering from UI are cared for by their family caregiver (Lee & Shin, 2000). Taking care of old parents who are leaking urine is a way of expressing an adult child’s filial piety. If they treat their parents very well, they were regarded as good children, if not they were blamed by society. The cultural construction of ageism related to Confucianism leads Korean women to abandon seeking help for it. At the same time older adults accept UI as a normal part of aging that
should be managed by family members not health care providers. These beliefs and attitudes toward UI prevent aging Korean women from help-seeking for UI.

*Shame*

UI is a sensitive issue for many women because of the shame and embarrassment that surrounds it (DuBeau et al., 1998). Shame and embarrassment influence women and their willingness to seek help. In terms of cultural discourse, one way of theorizing about the management of the body including the management of UI is through a system of ideas and practices that predominates at a given place and time. Cultural meanings associated with UI in women are strongly related to cultural perspectives of dirt. Dirt is defined as matter in the wrong place. Dirt is culturally defined and exists only in the eyes of the beholder (Douglas, 1966).

Western human beings have an unconscious hierarchy of dirt that is expressed in the degree of emotional intensity with which we approach or avoid different bodily products (Kubie, 1937). In other words, bodily products can be listed from the cleanest to the dirtiest. According to Kubie (1937), the ranking of bodily dirt products also reflects the social hierarchies in society. The male body is considered symbolically cleaner than the female body, young people’s bodies are cleaner than older peoples’ bodies, and rich people’s bodies are cleaner than poor people’s bodies (Kubie, 1937). This is expressed through our images of dirty and clean parts of the body: softness, wetness, and hairiness are always looked upon as dirtier than hardness, dryness, and the absence of hair (Kubie, 1937). We may understand the idea of a dirt hierarchy this way: clean body products give rise to positive and emphatic feelings, for instance, tears on a child’s cheek or a mother
breast-feeding her new-born (Kubie, 1937). Human milk and tears were ranked among
the cleanest in Kubie’s empirical tests in the United States in 1968 and 1972 and in
Norway in 1997 (Ross, Hirt, & Kurtz, 1968; Isaksen, 2001). The farther down the list, the
more negative the feelings, and the stronger the intensity of contempt and disgust.

Urine and feces were not considered among the dirtiest and most disgusting
products in 1968. Vomit and blackheads were the dirtiest. But in a 1997 study of 411
Norwegian health care students, feces were rated the dirtiest product of the body
(Isaksen, 2002). This belief has its roots in the social and cultural meanings of contempt
and disgust (Isaksen, 2002). Dirt and bad smells are closely connected with intense
feeling of disgust and ideas of disease and danger. Smells that evoke images of danger
easily give rise to feelings of mistrust and aversion, and the social consequence of being
“smelly” might be that one is avoided, consciously or not, by persons with whom one
wants to share one’s social life (Isaksen, 2002).

Fantasies of bodily dirt might have a greater impact on people’s social life than
the concrete experiences of bodily dirt and waste products (Isaksen, 2002). Kubie (1937)
suggested that studying how people’s images affect social life is as important as
observing their actual management of body products. Incontinent people’s views of what
other people might think of them as social and moral humans affects their social life.
They experience fear of losing their moral and social dignity if they feel that others sense
some weak or stale smells of urine or learn that they no longer are able to control their
bladders (Isaksen, 2000). The most common fear among terminally ill people is that of
losing control over their physical functions. Part of this fear is based on an idea of
becoming dirty (Cline, 1996). In this context, becoming dirty entails feeling untouchable because of the fears bodily fluids evoke in others (Peake & Manderson, 2003).

Interestingly, in the UK, before the 1970s, the term incontinence was used to describe not only urinary and fecal incontinence but also sexual promiscuity. Thus, some older adults continue to associate UI with sexual promiscuity and may be extremely embarrassed to admit symptoms or seek help (Smith & Smith, 1987). The cultural construction of being dirty leads women to feel shame associated with having UI.

Shame and Confucianism

While the concept of shame and embarrassment have been constructed based on a hierarchy of dirt in Western society, in Korea the concepts of shame and embarrassment have been constructed based upon Confucianism. Different cultures formulate shame and embarrassment differently. Although feeling shame in having UI is not unique to Korean women, Korean women feel more shame about UI than Western women because of the influence of Confucianism.

Historically, the greatest source of shame in Korea involved failing to live up to the expectations of one’s father, family, kin, and one’s circle of friends. Chī (恥, sense of shame) is a key concept in Confucianism. In the Confucian context, shame is regarded as the root of morality, and in a “shame culture”, morality is driven externally. People in “shame cultures” try to avoid causing emotional pain to others and being subjected to the pain they feel in being looked down on by others, embarrassed, and disgraced in the eyes of others (Hong, 2004). Unlike Westerners who are motivated to “be good” to avoid committing a sin that imperils their souls, shame-centered people are motivated to behave
as required by their social status to avoid losing their reputation (Kang, 2004). Compared to American women aging Korean American women are reluctant to reveal their genitourinary organs to male doctors because of the influence of Confucianism. Sharing women’s experiences with UI is a societal taboo even for husbands or close friends in Korea because women regard UI as an impurity (Chu, 1997; Lee & Shin, 2000).

Fatalism

Fatalism is a unique feature of the cultural construction of UI in Korea. In Korea, much of functional impairment resulting from UI is tolerated by family members because of fatalistic beliefs about decline in old age. There has been a long historical belief that UI accompanies dementia. In general, old age has been viewed in Korea as inevitable and not something requiring medical treatment. This attitude prevails not only among patients, but also among their family members, the community, and even health care providers.

UI is also viewed fatalistically in Korea because of a traditional Korean custom related to rest after childbirth. Korean women believe they are fated to get UI and there is nothing they can do to change fate. Most Korean women link their loss of urine to the inappropriate management of child birth. Koreans believe UI is caused by insufficient rest after birth rather than the birth itself (Lee & Shin, 2000). A qualitative study that explored how Korean women in a fishing village perceived UI discovered that most women believed that UI was caused by insufficient rest after child birth. A woman said, “I am afraid that I have to put up with this and I cannot get rid of it since it was caused by
the child birth. I could not take a sufficient rest because I had to come back to work” (Lee & Shin, 2000). This fatalistic viewpoint comes from belief about rest after child birth.

This belief is a unique phenomenon among Korean women with UI in that they tend to link women's health to insufficient rest after child birth. In Korea, there is a tradition that women who just experienced child birth are supposed to rest for at least 21 days without working. They are not allowed to shampoo their hair or wash their hands during that time. However, due to low economic status, some women must return to work immediately after birth. As a result, most Korean women perceived UI as an untreatable and “normal” gynecological condition related to child birth or menopause rather than as a neurological or senile condition as is common in other countries such as the United States (Jeter & Wagner, 1990; Burgio, Matthews & Engle, 1991; Brocklehurst, 1993) and the United Arab Republic (Rizk et al., 1999).

How the notion of UI has been socially and culturally constructed in both the U.S and Korea was reviewed. While there are some similarities between the two countries, each country has unique differences. These unique differences may lead to differences in HSB among women with UI in each country. The help-seeking of minority women with UI should be understood from a different perspective than that of the general population. Barriers may interfere with Korean women with UI seeking help compared to the general population in the U.S. This study examined various factors that may influence help-seeking among aging Korean American women with UI considering the Korean social and cultural construction of UI and tested a proposed theoretical model to determine
whether the model was culturally appropriate in explaining or predicting help-seeking among aging Korean American women with UI.

Significance of Study

This study is significant for three reasons: research, theory, and practice. First, no study has been conducted to explore the social and cultural construction of UI among Korean American women. Socio-cultural factors undergirding UI make it difficult for women to seek help. Many Korean American women with UI do not perceive UI as a problem that is worthy of attention because of its social and cultural construction. The social construction is rooted in the collectivist nature of Korean culture which makes UI a family, rather than an individual problem. The cultural construction is related to sexism, fatalism, and Confucianism which directs conceptions about ageism and shame. Studies of Korean American women with UI related to barriers and facilitators to health care access should promise a better understanding of their HSB. This study was designed to reveal new information about the ways in which these socio-cultural factors influence help-seeking for UI among Korean American elderly women. This study was designed to understand the background of UI and identify facilitators and barriers, including obstacles in HSB among Korean American aging women.

Second, currently there is no integrated theoretical model explaining HSB for UI that links individual factors including health beliefs and knowledge to socio-cultural and systemic factors. The theoretical model developed for this study was derived from a systemic perspective and a Behavioral Model for Vulnerable Populations (Gelberg et al., 2000). The test of this model through this research was designed to reveal new
information about help-seeking among Korean American women with UI to lay the
ground work for better understanding the factors that influence help-seeking among other
vulnerable minority groups.

Third, this study is significant to nursing practice. No study on factors related to
help-seeking in minority women has been conducted. This leads to misunderstanding of
nursing interventions for minority women with UI. However, minority women with UI
have different needs. The proposed study was designed to focus on social and cultural
factors as well as individual factors. The findings were intended to give information how
minority women perceive their UI symptoms and how they believe they should deal with
them by exploring the influence of the socio-cultural construction. It is important to
define UI in a culturally appropriate way and determine which interventions are effective
with various subgroups of incontinent people. There is a need for culturally sensitive
continence care and culturally appropriate guidelines. It is important for health care
providers to ensure that the public knows what services are available and how to access
them. Findings from this study were designed to provide fundamental data for designing
culturally competent UI care and health promotion programs for nursing practice.

Statement of Purpose

This study had two aims. First, this study was designed to assess the reliability
and validity of newly translated instruments from English into Korean version about
help-seeking for UI. Currently, there are no valid or reliable translated instruments
(Korean language) to measure Korean American women’s propensities or desires to seek
help. In this study, five newly translated instruments (The Brief ARSKA-II, The Family
Tradition and Authority Orientation Scale, The Social Support Scale, The Incontinence Quiz Scale, and Incontinence-QOL Scale) were tested for functional and cultural equivalence as well as reliability and validity. Second, this study was designed to test a theoretical model derived from a systemic perspective considering both individual and socio-cultural factors. The theoretical model was formulated to predict HSB of Korean American women with UI.

Research Questions

The following research questions guide this study: 1) What are the reliabilities of the five newly translated measures and the validity of one newly developed measure?, 2) What factors affect HSB of aging Korean American women with UI?, 3) Does severity of UI mediate the relationship between biological risk factor and HSB of aging Korean American women with UI?, and 4) Do family and community resources (health insurance, a regular source of health care, social support, income, and transportation) moderate the relationships between perceived need (severity of UI and Incontinence-QOL) and HSB among aging Korean American women with UI?.

Summary

The statement of the problem, background, significance of study, statement of purpose, and research questions were discussed.
CHAPTER TWO: LITERATURE REVIEW

Although UI is bothersome, many Korean women with UI do not perceive UI as a problem worthy of attention because of its social and cultural construction. Socio-cultural factors undergirding UI make it difficult for aging Korean American women to seek help. Instead, women tolerate UI. A conceptual framework derived from the Behavioral Model for Vulnerable Populations (Gelberg et al., 2000) is proposed to explain why aging Korean American women do not seek professional help although they are suffering from UI. In this chapter the following areas are addressed: 1) an overview of the model along with its theoretical perspectives, theoretical framework, and theoretical model, 2) literature review, and 3) a summary.

Overview of the Model

Theoretical Perspective

The theoretical perspective for this study is Social Ecological Theory. The Social Ecological Theory of Health Promotion has the potential to assist researchers to explain why aging Korean American women with UI do not seek help from health care providers considering both individual and the socio-cultural environment.

Social Ecological Theory

In the Social Ecological Theory of Health Promotion, the term ‘ecology’ pertains broadly to the interrelations between organisms and their environments. From its early roots in biology, the social ecological paradigm has evolved. Social ecology is viewed as an overarching framework for understanding the nature of people’s transactions with their personal, physical and socio-cultural surroundings in human health and illness.
Social Ecological Theory gives greater attention to the social, institutional, and cultural contexts of people-environment relations than did earlier versions of human ecology, which were more closely oriented to biological processes and the geographic environment.

Most health promotion theories address the interactional nature of the individual in his or her environment (Stokols et al., 1996). However, the social ecology approach takes it one step further by arguing that any effort to promote health must target behavior change at multiple levels and to create a health promoting climate in the social environment in which people make health-related decisions. The Social Ecological Theory of Health Promotion was developed to understand the complex community and environmental origins of health problems and to organize disease prevention and wellness programs that can effectively ameliorate those problems (Durkheim, 1951; Cassel, 1964; McKinlay, 1975; Catalano, 1979).

The Social Ecological Theory of Health Promotion encompasses certain core assumptions about the dynamics of human health and the development of effective strategies to promote personal and collective well-being. In the Social Ecological Theory of Health Promotion, individual behavior is viewed as a function of the larger social context of the individual’s life (Breslow, 1996). Illness or health should be understood within a social context because it is not only a physical condition but also reflects social norms in contemporary societies. A person’s desire to modify his or her own behavior may be impeded by economic, social, and cultural constraints. Control over one’s health can be exercised individually or collectively, the former for one’s own self and the latter
for the community. Thus, in order to engage in health promotion, the social ecological approach suggests combining individually focused efforts of change with modifications of the physical and social environment.

The Social Ecological Theory of Health Promotion has the potential to assist researchers to explain HSB among aging Korean American women with UI from both an individual and a health policy stance. In addition, the social ecological perspective of health promotion has the potential to assist researchers to explain why aging Korean American women tolerate UI rather than seeking professional help by considering individual determinants as well as social structure.

At the individual level, using this approach may help aging Korean American women to expand their awareness of UI as a disease that can respond to professional help rather than dealing with UI individually or in the family. At the health policy level, the role of environmental factors is a key policy issue to understanding the influence of health polices or organizations on help-seeking among aging Korean American women with UI.

There may exist community or policy level of constraints that may impede Korean American women’s help-seeking such as the availability of providers, the structure of the healthcare delivery system, the external environment, and the health polices that dictate payment for services. Awareness of the social structure and culture that surround UI may also lead women to increase their voices and to become empowered in American society. This may ultimately lead to increasing awareness of UI as a
significant problem among minority women and it may help to establish health policy for minority women with UI.

Theoretical Framework

The Behavioral Model for Vulnerable Populations which is rooted in the social ecological perspective was adapted as the theoretical framework for this study. The Behavioral Model for Vulnerable Populations emphasizes that the study of utilization of services has to be carried out with explicit concern for the ecological and organizational contexts in which health behavior occur (Bice & White, 1969). One of the most commonly used frameworks for analyzing patient utilization of healthcare services is the Behavioral Model developed by Andersen (1968, Figure 1). The original Behavioral Model of Health Services Utilization was developed to assist in understanding why people use health care services and address the problem of inequitable access to health care. The model has been used to test a range of hypotheses about the ways in which health behaviors are shaped and constrained by social and community factors (Andersen, 1968).

The theoretical foundations of the Behavior Model are attributed to Suchman (1965; 1967) and Rosenstock (1966). Suchman, taking a sociological perspective in contrast to the psychological orientation of the health belief model, combined selected socio-cultural variables with selected characteristics of the individual to explain client health behavior. The underlying assumption of Suchman’s model was that behavior is constrained by the expectations and directives of one’s socio-cultural milieu. Suchman (1965) proposed that certain socio-cultural background factors predispose the individual
to accepting or rejecting professional help. Suchman (1967) posited that the
interrelationships between social group organization variables, e.g., ethnic exclusivity,
friendship solidarity, and family tradition and authority, and individual medical
orientation variables, e.g., knowledge about disease, skepticism of medical care,
dependency in illness, would foretell client health behavior. The Behavioral Model was
an attempt to integrate a number of ideas about the “how’s” and “why’s” of health
services use (Andersen, 1995).

The Behavioral Model is an excellent example of model progression across time.
There have been numerous revisions and updates. The second phase in the 1970’s added
the dimensions of specific chronic illness and outcomes such as satisfaction (Andersen &
Newman, 1973; Aday & Andersen, 1974). The third phase in the 1990’s added health
behaviors as a separate section of the model (Andersen, 1995). The latest revision is the
Behavioral Model for Vulnerable Populations (Gelberg et al., 2000, Figure 2). A major
criticism of the third model was its inability to account for specific social structure
characteristics that influence health care utilization for different groups. Gelberg,
Andersen, and Leake (2000) incorporated a vulnerability domain in their latest revised
version of the behavioral model. The goal of this version is to more accurately assess
factors that may be pertinent for specific vulnerable groups. The Behavioral Model for
Vulnerable Populations is an approach to understanding health care access that integrates
strategies of behavioral change and environmental enhancement within a broad systems-
theoretical framework. This conceptual framework uses a systems perspective to
integrate a range of individual, environmental (societal determinants and health care
system), and provider-related variables associated with decisions to seek care. It focuses on factors that make a particular population vulnerable and which could affect their health status, use of services and achievement of outcomes.

FIGURE 1. The Original Behavioral Model (Andersen, 1968)

Predisposing Characteristics → Enabling Resources → Need → Use of Health Care
| Demographic | Personal/Family | Perceived |
| Social Structure | Community | Evaluated |

Health Beliefs

FIGURE 2. The Behavioral Model for Vulnerable Populations (Gelberg, Andersen, & Leake, 2000)

Populations Characteristics

Predisposing → Enabling → Need → Health Behaviors → Outcomes

The three major constructs of the Behavioral Model for Vulnerable Populations are 1) population characteristics, 2) health behavior, and 3) outcomes. Population characteristics are defined as determinants of health behavior. Population characteristics consist of three independent factors: a) predisposing, b) enabling, and c) need (Andersen & Newman, 1973). Predisposing factors are defined as the propensity that inclines an individual toward the use of health services (Andersen, 1995). Predisposing factors
consist of demographic, social structure, and health belief variables. Demographic variables include age, gender, marital status, and past illnesses. Social structure includes education, race, occupation, family size, ethnicity, religion, and residential mobility. Health beliefs include values concerning health and illness and attitudes toward health services and knowledge about disease (Andersen & Newman, 1973).

Enabling factors are defined as the means that individuals have available to them for the use of services (Andersen & Newman, 1973). Enabling factors refer to conditions that facilitate or impede the use of services by an individual who is predisposed to seek care (Wan & Soifer, 1974). Enabling factors consist of personal/family and community resources. Personal/family resources refer to family income, health insurance coverage, availability of services, and access to a regular source of health care. Community resources refer to ratios of health personnel and facilities to population, price of health services, region of the country, and urban-rural characteristics (Andersen & Newman, 1973).

Need factors are defined as the level of difficulty one experiences in areas such as health or ability to function. Need refers to illness level, which is the most immediate cause for seeking health services (Anderson, 1995). Need factors consist of perceived need and evaluated need. Perceived need is defined as how people view their own general health and functional state, as well as how they experience symptoms of illness, pain, and worries about their health and whether or not they judge their problems to be of sufficient importance and magnitude to seek professional help. Perceived need is measured by the symptoms of an illness perceived by the individual. Evaluated need is defined as

Health behavior is not defined in the Behavioral Model for Vulnerable Population. Health behavior is assumed as a joint function of both personal attributes and organizational factors (Aday & Andersen, 1974). Health behaviors are measured by health practices and service utilization. Health practices refer to diet, exercise, self-care, tobacco use, and adherence to care. Service utilization includes a broad array of health services, such as emergency services and primary care (Andersen & Newman, 1973).

Health outcomes was defined as the end-products of health policy regarding access. These measures include both objective and subjective descriptors of the population’s entry to and passage through the system. They can be measured by health status and consumer satisfaction. Health status refers to perceived and evaluated health. Consumer satisfaction refers to general satisfaction, technology quality, interpersonal aspects, coordination, communication, financial aspects, time spent with clinician, access/availability/convenience, and administration hassle etc. (Andersen & Newman, 1973).

The model assumes a causal association among three constructs: population characteristics, health behavior, and outcome. Each is a necessary condition for the following but not sufficient in and of itself for the use of health services to occur (Andersen & Newman, 1973). Given predisposition to use a service and the ability to access it, need variables indicate the immediate reasons of health services use. Each
factor (predisposing, enabling and need) might be conceived of as making an independent contribution to predicting use. Factors that enable or impede use, and their need for care all contribute to predisposition.

The model suggests an explanatory process or causal ordering where the predisposing factors might be exogenous (especially the demographic and social structure), some enabling resources are necessary but not sufficient conditions for use, and some need must be defined for use to actually take place. Health behavior is predicted by the predisposing, enabling, and need factors. Finally, outcomes which are dependent variables are explained by those independent three factors and health behaviors (Gelberg et al., 2000). The model includes feedback loops showing that outcome, in turn, affects subsequent population characteristics as well as health behavior.

*Theoretical Model*

A conceptual framework of this study (Figure 3) was derived from the Behavioral Model for Vulnerable Populations based on a literature review of 1) help-seeking among the general population women and the ethnic minority women with UI in the U.S., the UK, and other countries such as Australia, Sweden, Canada, and Netherlands etc., 2) studies of health or help-seeking in Korean American women with breast cancer, cervical cancer, and who are smoking and dieting, and 3) studies of general physical health status and mental illness among Korean American women, Chinese Americans and the Hispanic population.

The basic premise underlying the theoretical model is that Korean immigrant women’s responses to UI are driven in large part by its socio-cultural construction.
Korean immigrant women’s responses to UI are multifaceted and influenced by numerous variables. The underlining assumption of the theoretical model is that help-seeking among aging Korean American women with UI is influenced by the individual as well as the socio-cultural construction of UI despite living in the United States. In other words, individual health beliefs and demographic variables are not enough to predict help-seeking among this population. The socio-cultural contexts which may facilitate or impede their help-seeking should be considered to explore their response to UI. For example, social structure and culture may act as major factors that impact on their seeking help. This study focused on gaining a theoretical understanding of Korean immigrant women’s responses to UI based on a systemic perspective, the Behavioral Model for Vulnerable Populations. This study dealt with the independent variables of predisposing, enabling, and need factors and the dependent variable of HSB.

Outcomes were not measured since numerous studies have shown that use of health care services or seeking treatment improved or alleviated UI symptoms. In addition, the focus of this study was on exploring aging Korean immigrant women’s help-seeking for UI. HSB was dependent variable, and predisposing, enabling, and need factors were predictors. Need factor (severity of UI) was measured as a mediator to biological risk factors and HSB. Enabling factors were measured as moderators to need factors and HSB.

HSB was defined as a Korean woman’s decision to do something about a symptom which is a result of UI. It fits with the Gelberg and colleagues’ model (2000) in that health behavior was assumed to be a joint function of both personal attributes and
organizational factors. Korean American women’s help-seeking was attributed by both individual and socio-cultural contexts. HSB has not been defined in any other UI study. It has been used interchangeably with health care-seeking behavior, treatment seeking behavior, seeking care behavior, or consultation behavior (Johnson II et al., 1998; Rizk et al., 1999; Johnson et al., 2000; Ricci et al., 2001). In this study, HSB was operationally defined in four ways: 1) likelihood the woman might seek health care services, 2) the reasons why she had not considered seeking professional help, 3) whether the woman had sought health professional help for UI, and 4) whether she had done something to treat the UI symptoms.

Predisposing predictors were measured by four variables: 1) biological risk factors (age, the number of child births, menopause, and hysterectomy), 2) culture (low acculturation, family tradition and authority orientation, and the preference for a female health care provider), 3) health beliefs (knowledge and attitudes about UI), and 4) social structure (education and employment). Enabling predictors were measured by health insurance, social support, a regular source of health care, income, and transportation. Need predictors were measured by the severity of UI and incontinence specific quality of life (QOL).

Predisposing Factors

**Biological Risk Factors**
- Age
- The number of childbirths
- Menopause
- Hysterectomy

**Culture**
- Low acculturation
- Family tradition & authority
- Preference for a female health care provider

**Health Beliefs**
- Knowledge and attitudes about UI

**Social Structure**
- Education
- Employment

Need Factors

**Perceived Need**
- Severity of UI
- Incontinence-QOL

Enabling Factors

**Family & Community Resources**
- Health insurance
- Social support
- A regular source of health care
- Transportation
- Income

Enabling Factors

Help Seeking Behavior
Literature Review

There have been numerous studies to explain HSB for UI among the general population women in the UK, the US and other countries. However, no study has been conducted to explore socio-cultural factors related to HSB among minority women with UI in the United States. A literature review about predictors related to HSB among women with UI will be discussed in this section.

Help-Seeking Behavior

A major aspect of help seeking is searching for an answer when symptoms signal that “something is not right.” This early diagnosis-seeking process involves a period of self-care and when such efforts are not effective, the next phase is to obtain professional healthcare or help-seeking (Koldjeski et al., 2004). Lin, Inui, Kleinman, and Womack (1982) found that the help-seeking process was correlated strongly with ethnicity. Asian Americans tended to show longer delay for treatment when ill (4.25 years) than did African Americans (2.89 years) and Caucasian Americans (1.66 years). Tachuechi, Leaf, and Kuo (1988) explored differences in perception of barriers to help-seeking among ethnic groups of Hawaiians. Caucasians perceived fewer barriers for treatment of alcoholism and emotional problems than did Filipino, Japanese, and Native Hawaiian individuals.

Some studies have shown that, compared to other ethnic group, Asian Americans and Pacific Islander (AAPI) women in the United States have lowest cancer screening rates and are usually diagnosed at a later stage of cancer. Only 58.4% of adult AAPI women have had a Pap test within the past 2 years, the lowest rate of screening among all
racial and ethnic groups (Centers for Disease Control and Prevention, 1994). Studies have shown that Korean and Cambodian women have low rates of cervical cancer screening (Carey & Gjerdingen, 1993; Yi, 1996). Only 48.5% of AAPI women age 50 and older reported having a mammography or clinical breast exam in the past 2 years, the lowest rate for breast cancer screening among all racial and ethnic groups (Centers for Disease Control and Prevention, 1994).

Several studies have documented the help seeking behaviors of Asian American elders. The Commonwealth Fund’s 2001 Health Care Quality Survey revealed that 68% of Asian Americans reported having a regular doctor, although the rates were lower among Vietnamese (59%) and Koreans (46%). In addition, Koreans (41%), Chinese (35%), Vietnamese (30%), and Asian Indians (28%) reported higher rates of difficulties in communicating with their doctors than did the total Asian population in the United States (27%) (Hughes, 2002). Low rate of help-seeking for UI among aging Korean American women can be predicted from studies about help seeking for cancer or mental illnesses.

**Predisposing Predictors**

Predisposing predictors includes demographic, culture, health beliefs, and social structure. Predisposing factors includes variables that describe the propensity of aging Korean American women with UI to utilize health services. These properties exist prior to the onset of UI episodes.
Biological Risk Factors

Biological risk factors are defined as biological imperatives suggesting the likelihood that people will need health services (Hulka & Wheat, 1985). Biological risk factors for UI are age, the number of childbirth, menopausal status and hysterectomy. The mediator effect of severity of UI between biological risk factors and HSB were tested. The specified relation statements were as follows: 1) the older the Korean American woman with more severe UI, the more likely to seek help; 2) the more times the Korean American woman has given birth with more severe UI, the more likely to seek help; 3) if the Korean American woman is postmenopausal with more severe UI, the more likely to seek help; and 4) if the Korean American woman has undergone a hysterectomy with more severe UI, the more likely to seek help.

Age. UI is seen more frequently among women than men at all ages, and both men and women show an increase in the prevalence of UI with advancing age (Kim, 1996; Lee, 1997; Baik, 1998; Seo, 1999; Shin, 2000; Song, 2001; Hunskaar et al., 2002; Park et al., 2004). Previous studies have suggested that more severe incontinence is associated with with increasing age (Thomas et al., 1980; Foldspang et al., 1992). In numerous studies, increasing age was one of the most influential factors leading to seeking help among women with UI (Johnson II et al., 1998; Ricci et al., 2001; Hägglund et al., 2001; Hägglund et al., 2003; Peters et al., 2004; Holroyd-Leduc & Straus, 2004; Kim, 2001; Kinchen et al., 2003; Kubik et al., 2004; Novielli et al., 2003; Sampselle et al., 2002; Hannestad et al., 2002; Reckers et al., 1992). The mediator effect of severity of UI between age and HSB was tested in this study.
**Childbirths.** Parity has an effect on the prevalence of UI. The role of childbearing in predisposing women to UI has been supported by several studies that have demonstrated a link between UI and parity (Elving et al., 1989; Sommer et al., 1990; Harrison & Memel, 1994; Burgio et al., 1996), however findings are inconclusive. Previous studies have suggested that more severe incontinence is associated with a reproductive history of child births. Two studies (Thomas et al., 1980; Kuh et al., 1999) found a statistically significant trend for increasing severity with increasing parity, while Rortveit and colleagues (2001) found no effect on severity. Cumulative effects of parity, four or more births, have been observed in other studies (Sommer et al. 1990). Although no studies have been conducted to explore the relationship between parity and HSB, a mediator effect of severity of UI between parity and HSB was tested in this study.

**Menopause.** Postmenopausal women are more likely to have UI compared to premenopausal women (Luft & Vriheas-Nichols, 1998). A woman’s pelvic organs and viscera are rich in hormone receptors, and changes in the pelvic floor are accelerated by menopause. Estrogen depletion increases the atrophy rate of the mucosal tissue that lines the urethra and vagina. This deterioration and a decline in mucus production within the urethra weaken the urethra’s ability to maintain a watertight seal, especially when abdominal pressure increases with coughing, sneezing, exercise, or even normal movement (Luft & & Vriheas-Nichols, 1998).

There have been conflicting reports about the role of menopause on severity of UI (Thom & Brown, 1998), with some investigators finding prevalence equal between pre and post menopause, and thus showing is greater in postmenopause (Rekers et al., 1996).
Although no studies have been conducted to identify the relationship between menopause and HSB, a mediator effect of severity of UI between menopausal status and HSB was tested in this study.

_Hysterectomy_. Hysterectomy also has been shown in recent epidemiologic studies to have a positive correlation with UI development (Diokno et al., 1990; Milsom et al., 1993; Brown et al., 1996). Brown and colleagues (1996) found a 40% increased risk of incontinence in community-dwelling women who had undergone surgical removal of the uterus. The reasons for the association between hysterectomy and incontinence are not known. Hypotheses include loss of structural support to the bladder, microscopic scarring of the urethra, or disruption of the pelvic nerve plexus (Luft & Vriheas-Nicholas, 1998).

The relationship between severity of UI and hysterectomy is controversial (Thom & Brown, 1998). Although no studies have been conducted to identify the relationship between hysterectomy and HSB, a mediator effect of severity of UI between parity and HSB was tested in this study.

_Culture_

Culture was defined as the learned and shared knowledge, beliefs, and rules that people use to interpret experience and to generate social behavior. Culture permeates multiple domains across the society (Spradley, 1972). Culture affects how UI symptoms are perceived among aging Korean American women. In this study, culture was measured by acculturation, family tradition and authority orientation, and the preference for the female health care provider. The relationship between culture and HSB was tested. The specified relation statements are as follows: 1) the more highly acculturated aging Korean
American woman with UI, the more likely she is to seek help; 2) the more the Korean American woman with UI adheres to family tradition and authority, the less likely she is to seek help; and 3) if the Korean American woman with UI prefers a female provider, the less likely she is to seek help.

**Acculturation.** Acculturation was defined as the adaptation to a new cultural environment from a person’s original culture (Juon, Choi, & Kim, 2000). In this study, acculturation was operationalized using the Brief ARSMA (Acculturating Rating Scale of Mexican-American) (Cuéllar, Arnold & Maldonado, 1995)-II which is translated into the Korean language. The instrument measures (a) language spoken, (b) preference of movies and TV, (c) preference of friends and literacy, and (d) language in which the subject thinks.

Spoken and written English proficiency are proxy measures of acculturation. Illiteracy and poor English proficiency can be obstacles to accessing to health care services in minority women. In several studies among Asian American women with cancer, it has been found that the more acculturated an individual, the more likely she is to seek help (Mo, 1992; Yi, 1996; Yi, 1998; Kim et al., 1999; Juon, Choi & Klassen, 2003). More acculturated college-aged Vietnamese women in the United States were more likely to obtain regular Pap smears (Yi, 1998). Kim and colleagues (1999) and Juon and colleagues (2003) reported that one of the factors related to Pap screening for detecting cervical cancer in Korean American women was spoken English proficiency. Juon and colleagues (2003) found that women with a low level of education and low
English proficiency had lower rates of Pap smears than those who had a high level of education and high English proficiency.

Asian American elders experience language and cultural barriers that make them less likely to receive social services and medical care, and to benefit from social interaction (President’s advisory commission on AAPI, 2003). Korean American women who are unable to speak or read English may have difficulty in accessing health care services due to difficulties with scheduling appointments, communication and interactions with health professionals, and getting information on UI. In addition, it is not easy to communicate about subtle and shameful UI symptoms in English with health care providers. The relationship between acculturation and Korean immigrant women’s help seeking for UI was tested.

*Family Tradition and Authority Orientation.* Family tradition and authority were defined as the importance placed by the individual’s family upon customs and traditions and the degree of authority possessed by the head of the household (Suchman, 1965). In this study, this concept was operationalized by the scale of Family Tradition and Authority Orientation (Suchman, 1965). Adherence to family cultural norms is an important issue in seeking help among aging American Korean women with UI. Patriarchy, one hallmark of Korean culture, may be a barrier to treatment for women with UI. Decision making about seeking help from health care providers is an essential issue for aging Korean American women with UI, because the custom is to look to the traditional head of the household (husband or son) for such decisions. Even if other family members want to encourage a woman who has UI symptoms seek professional
help, the male head of the house may or may not allow it. Therefore, adherence of family tradition and authority may be an important factor that prevents aging Korean American women from seeking help for UI. Although there have been no studies conducted to investigate the relationship between family tradition and authority and help-seeking among Korean immigrant women with UI, the relationship was tested in this study.

*Preference for a Female Health Care Provider.* Many aging Korean American women with UI may have a preference for a female health care provider. Studies have examined the influence of cultural barriers on the frequency of cervical cancer screening in Korean American women (Mo, 1992; Naish et al., 1994; Kelly et al., 1996; Yi, 1996). Kelly and colleagues (1996) reported that when cultural barriers such as preferred use of female physicians and group screening are addressed, the rate of cervical cancer screening increases. Such cultural constraints may impede Korean American women’s seeking help despite their exposure to life in the U.S.

Embarrassment and shame are main reasons preventing help-seeking for UI among women. Goldstein and colleagues (1992) and Hägglund and colleagues (2003) found that women who are embarrassed about UI are reluctant to speak about their UI symptoms to health care providers, family or friends. A study on UI conducted by Haggar (1995) reported that the Asian community was under-represented in the client group accessing continence services in the U.K. Haggar indicated that embarrassment and insufficient numbers of female doctors were major factors preventing Bangladeshi women from accessing continence services.
Seeking help for a continence problem requires overcoming embarrassment. Because of the influence of Confucianism which is a dominant educational philosophy in Korea, getting help through a male urologist or gynecologist as the gateway to health service, can be difficult for aging Korean American women with UI. They may not feel comfortable discussing an intimate subject like having UI with a man. In addition, women with UI may feel it is shameful to reveal their genitourinary organs to a male physician for an intimate vaginal examination (Lee & Shin, 2000). However, it is difficult to find a female Korean urologist or gynecologist in the United States. This may hinder affected Korean American women from seeking help. The relationship between the preference for the female health care providers and Korean immigrant women help-seeking for UI was tested in this study.

Health Beliefs

Health beliefs were defined as attitudes, values, and knowledge that people have about health and health services (Andersen, 1995). Health beliefs were measured by attitudes and knowledge about UI. The specified relation statement is as follows: the more the Korean American woman has positive attitudes toward and knowledge about UI, the more likely she is to seek help.

Knowledge and Attitudes About UI. Knowledge, attitudes, and belief toward UI was operationalized using the Incontinence Quiz Scale (Branch, Walker, Wetle, DuBeau, & Resnick, 1994). Studies show that health beliefs about UI act as barriers to seeking help in both the general population and minority groups including: a) the belief that incontinence is normal and only a minor problem, b) lack of awareness of available
treatment, c) low expectations for treatments effectiveness, and d) shame and embarrassment about UI (Rizk et al., 1999; Dugan et al., 2001; Mason et al., 2001; Walters, Iliffe, & Orrell, 2001; Kinchen et al., 2003; Minassian, Drutz, & Al-Badr, 2003; Horrocks et al., 2004; Chaliha & Stanton, 1999). Kinchen and colleagues (2003) indicated that after symptom severity and impact were taken into account, attitudes about both incontinence and healthcare use were important factors in help-seeking. Forty one percent of respondents agreed that incontinence was just a natural part of growing older.

The most common reasons given for not seeking help for UI was that the disorder was a minor problem, which they felt they could cope with on their own. Interestingly, women who consulted professional help did so because they were afraid of the odor of urine and they perceived the leakage as shameful and embarrassing. Knowledge and attitudes about UI among Korean immigrant women influence their seeking help. A study was conducted to investigate the knowledge and health beliefs on UI in 2,183 Korean women aged 30 to 89 years in Korea (Song, 2001). Korean women had a low level of knowledge, 5.21 out of 14. Most subjects believed that UI was caused by normal aging and it was not curable. This study did not explore their rate of seeking help. However, it may be that knowledge and health beliefs about UI have an influence on Korean women’s help-seeking for UI. The relationship between health beliefs and help-seeking among Korean immigrant women with UI was tested in this study.

Social Structure

Social structure was defined as a broad array of factors that determine the status of a person in the community, his or her ability to cope with a presenting health problem,
and his or her ability to command resources to deal with it (Andersen, 1995). In this study, social structure was measured by education level and employment status. HSB is positively influenced by social structure. The specified relation statement is as follows: more educated and employed Korean American woman with UI are the more likely to seek help.

*Education.* HSB is positively influenced by educational level. Several studies examined HSB of women with UI in relation to education level found no significant effect on HSB in the general population (Margalith, Gillon, & Gordon, 2004; Hägglund et al., 2003; Yu et al., 2003; Dugan et al., 2001; Hannestad et al., 2002; Stoddart et al., 2001). In contrast, it has been reported that the more educated the minority woman, the more likely she is to seek help for UI (Bush et al., 2001; Kubik et al., 2004).

Studies reported that more highly educated Asian women are more likely to seek screening for cervical cancer (Seow, Huang, & Straughan, 2000; Juon et al., 2003). It has also been reported that more educated minority women were more likely to seek help for UI (Bush et al., 2001; Kubik et al., 2004).

According to the U.S Census Bureau (2000), Koreans, similar to other Asian groups, continue to exhibit one of the highest levels of educational achievement. The percentage of persons born outside the U.S, 25 years of age and over with at least a bachelor’s degree is generally high for most Asian groups as compared with the national average. For example, 64% of Asian Indians, 52% of Chinese, 49% of Koreans, 43% of Filipinos, 43% of Japanese, and 22% of Vietnamese have bachelor’s degree. The corresponding figure for all persons in the U.S was 27%. For both the U.S. born and
foreign born groups, the educational level of Asians far surpasses the national average. However, this figure may not represent the educational level of Korean American women in the United States. Although Korean women’s educational level is increasing because of the influence of feminism, aging women are not usually highly educated in Korea because of the influence of Confucianism. The low education level among Korean American women may act as an obstacle to seeking help for UI.

Employment. Employment status is reflected by three categories; employed, unemployed and retired. HSB is positively influenced by employment status. Unemployment has been reported as one of the barriers to seeking professional help among the general population of women with UI in the UK (Roe et al., 1999; Hannestad et al., 2002; Kinchen et al., 2003). Access to affordable insurance in the United States is highly dependent on the nature of one’s employment (Glied & Stabile, 2001). Employment status may be a factor that may impede or facilitate help-seeking among Korean women who migrate to the United States.

Enabling Predictors

Family and Community Resources

The enabling resources specific to aging Korean American women’s families and attributes of the community in which they live will be described. Enabling resources must be present for health service use to take place among Korean immigrant women with UI. Family enabling resources were measured by health insurance, a regular source of health care, social support, and income. Community enabling resource was measured by
transportation. Enabling factors act as moderators to need predictors (severity of UI and Incontinence-QOL).

*Health Insurance.* Health insurance is one of the enabling factors that facilitates or impedes HSB. In addition, having health insurance may moderate the relationship between severity of UI and Incontinence-QOL and HSB. Health insurance is one of the most striking correlates to seeking help and services (Hayward et al., 1991; Feinstein, 1993; Lambrew et al., 1996). Lack of health insurance results in delayed care, difficulty in getting care, and more adverse consequences from delayed or foregone care (Kim, Shin, & Nakama, 1991; Aday, 1993; Song et al., 1993; Schoen et al., 1997).

A study using the Behavioral Model (Aday & Andersen, 1974) indicated that health insurance coverage was the strongest predictor of Korean American health service utilization. Need factors were not significant, suggesting that uninsured Korean Americans have less access regardless of need (Ryu, Young, & Park, 2001). Immigrant populations are among those groups with disproportionately low levels of health insurance and health care access (Ku & Matani, 2001). Koreans who migrate to the Unites States lose their health insurance (Park et al., 1990; Sin, 1992; Park et al., 1997). Among Asian Americans, Koreans (55%) were most likely to be uninsured followed by Vietnamese (37%), Asian Indians (18%), Chinese (16%), Filipinos (15%), and Japanese (4%) (Hughes, 2002). Even if aging Korean American women have severe UI and low QOL, if they can not afford to pay for the cost of UI care and have no health insurance coverage, health utilization may not occur. The lack of health insurance can be a barrier when accessing health care services among aging Korean American women with UI.
Although no study has been conducted to investigate the moderating effect of health insurance with severity of UI and Incontinence-QOL on HSB, the relationships were tested in this study.

*A Regular Source of Health Care.* Having a regular source of health care was operationalized by whether the Korean American woman visits a health care provider on a regular basis. Kinchen and colleagues (2003) reported women’s regular source of health care was associated with HSB, with those discussing UI having visited their health care provider more frequently and being more likely to schedule/keep regular check-up appointments with their provider. Women who have more contact with their providers may have more opportunities to mention their conditions to their providers.

Available health service resources are an enabling factor that facilitates or impedes HSB of aging Korean American women with UI. Keeping regular appointments for routine/preventive UI care is one of the factors associated with help-seeking among women with UI (Kinchen et al., 2003). A Korean American woman who has a regular source of health care may find it easy to seek help for UI. Although no study has been conducted to investigate how regular health service visit modulates severity of UI and Incontinence-QOL on HSB, the moderating relationships were tested in this study.

*Social Support.* Social support can be defined as interpersonal transactions involving at least one of the following: emotional concern, information, appraisal, and instrumental aid (House, 1981). Social support was operationally defined by two Social Support Scales (Seow, Huang, & Straughan, 2000; Taylor et al., 2004) originally developed for Asian women with cervical cancer. One question was added to assess the
available information about UI. The sources of social support examined were: family, friends, and available information.

Social support from family and friends is an important factor that may influence HSB of Korean immigrant women with UI. Song (1999) reported that social support from family, friends and available information about breast cancer in a community facilitate help-seeking among Korean American women. Many Korean women are reluctant to speak out about their UI symptoms even to her husband (Lee & Shin, 2000). A project in East London reported a limited availability of translated information as a major factor preventing Bangladeshi women from accessing continence services (Haggar, 1995). Social support is an enabling factor that facilitates or impedes HSB of aging Korean American women with UI. Although no study has been conducted to investigate the moderating effect of social support with severity of UI and Incontinence-QOL on HSB, the relationships were tested in this study.

Transportation. Transportation is an enabling factor that facilitates or impedes HSB of aging Korean American women with UI. Access to transportation is a barrier to access to health care services among minority groups. Katerndahl and Realini (1998) indicated that among a Hispanic group who had panic disorders, access to transportation was a barrier to accessing health care services. In contrast, Katerndahl and Parchman (2002) reported that transportation was not an enabling factor that explained ambulatory care use by people with panic attacks in general population in the United States.

Korean immigrant elder women who are living in Arizona may have difficulty accessing health care services because of lack of transportation. Compared to elders in
Korea, transportation in the United States is a critical issue for elderly immigrant women. After immigration, they may have difficulties going where they want to go. Immigrant women who are illiterate in English may not be able to obtain a driver’s license. Public transportation in Arizona is poorer than that in other states and Korea. A Korean American elderly woman with UI who cannot drive may not be able to get access to health care services even if she wants. Although no study has been conducted to investigate how transportation modulates severity of UI and Incontinence-QOL on HSB, the moderating relationships were tested in this study.

*Income.* Income is an enabling factor that facilitates or impedes HSB of aging Korean American women with UI. Affordability of health care resources can be an important issue for minority women who want to seek professional help (Flores & Vega, 1998; Ryu, Young, & Park, 2001). Jang, Lee and Woo (1998) reported that income was one factor affecting the health care access and utilization among Chinese Americans. Nuño and colleagues (2005) conducted a study to examine how acculturation and income impacted health care access, utilization, and prevention knowledge among a population of Hispanic women living along the U.S-Mexico border. In that study, income was a primary factor related to health care utilization in Hispanic women rather than acculturation.

According to the U.S Census Bureau (2000), Asian Americans elders are more likely to live in poverty than their counterparts in the general population (President’s advisory commission on AAPI, 2003). Low income may act as a barrier to seeking professional help among aging Korean American women with UI. Although no study has
been conducted to investigate the moderating effect of annual family income with severity of UI and Incontinence-QOL on HSB, the relationships were tested in this study.

**Need Predictors**

*Perceived Need*

Need predictors are the immediate reasons for seeking help among Korean American women with UI. In this study, need predictors were perceived severity of UI and Incontinence-QOL. HSB was predicted to be positively influenced by the self-reported severity of UI and negatively influenced by Incontinence-QOL among Korean American women with UI.

*Severity of UI.* Severity of UI was operationally defined based on frequency and amount of leakage using the Incontinence Severity Index Scale developed in Norway to provide a simple severity index of female incontinence for use in epidemiological surveys (Sandvik, Hunskaar, Seim, Hermstad, Vanvik, & Bratt, 1993). It has been reported that severity of UI symptoms is one of the most influential facilitators to seeking help in the United States (Rizk et al., 1999; Dugan et al., 2001; Peters et al., 2004). Several studies in the UK have shown that the number of women with incontinence who seek help increases with the severity of the incontinence (Holst & Wilson, 1988; Burgio, Matthews, & Engel, 1991; Hunskaar et al., 2000; Hägglund et al., 2001; Stoddart et al., 2001). Among Korean American women the more likely a woman is to experience severe incontinence symptoms, the more likely she is to seek help.

*Incontinence-QOL.* Health-related QOL is a multidimensional concept referring to a person’s physical, social, and psychological functioning and the overall assessment
of his or her life quality (Naughton & Shumaker, 1997). QOL measures can be classified as a) generic measures (multidimensional questionnaires designed to be used across a wide range of conditions and populations) and b) condition-specific measures (designed to assess QOL in specific types of conditions or illness). A UI condition-specific measure developed by Wagner and colleagues (1996) was used in this study to assess the wider effects of incontinence on aspects of everyday quality of life. It measured three aspects of Incontinence-QOL: a) avoidance and limiting behavior, b) psychosocial impacts, and c) social embarrassment.

It is reported that poor UI specific QOL scores are significantly associated with help-seeking among women with UI (Wagner et al., 1996; Dugan et al., 2001; Hägglund et al., 2001; Kinchen et al., 2003). Hägglund and colleagues (2001) compared the QOL in (a) women with UI and women without UI in relation to age, (b) type of incontinence (stress versus urge incontinence), and (c) the decision to use services for UI or not. They found that both women with stress incontinence and women with urge incontinence had significantly lower scores on all eight QOL dimensions compared with women without UI. Hägglund and colleagues (2001) reported that women with UI who had consulted health care providers had significantly lower QOL scores in seven out of eight dimensions than women who had not consulted health care. Therefore, help-seeking is associated with substantially lower QOL scores among women with UI.

From the literature review the theoretical model was developed and tested. Three propositional statements were derived from the theoretical model of this study: 1) HSB is influenced by predisposing (culture, health beliefs, and social structure), enabling (family
and community resources), and need (perceived need) factors, 2) Need factors (perceived need) act as mediators to the biological risk factors for HSB, and 3) Enabling factors (family and community enabling resources) act as moderators to need factors (perceived need).

Specific hypotheses are as follows; 1) HSB is positively influenced by (a) knowledge and attitudes about UI, (b) education and employment, (c) having health insurance, social support, having a regular source of health care, income, and transportation, and (d) severity of UI, and HSB is negatively influenced by (e) low acculturation, family tradition and authority, and preference for a female health care provider, and (f) low Incontinence-QOL, 2) Severity of UI acts as mediator in the relationship between biological risk factors (age, the number of child births, menopause, and hysterectomy) and HSB, and 3) Health insurance, social support, a regular source of health care, income, and transportation act as moderators in the relationship between both severity of UI and Incontinence-QOL and HSB.

Summary

This chapter has presented the overview of the model including its theoretical perspective, theoretical framework, and theoretical model and the literature review. This study design features are considered in Chapter 3.
CHAPTER THREE: METHODOLOGY

Methodology

In this chapter the following areas are addressed: 1) research design, 2) target population and selection criteria, 3) data collection, 4) protection of human subjects, 5) instruments, 6) translation of instruments, 7) data analysis, and 8) a summary.

Research Design

This study used a cross-sectional correlation descriptive design. This study explored the relationships between HSB and predictors among aging Korean American women with UI.

Target Population and Selection Criteria

This study focused on Korean women’s responses to UI. Aging Korean American women who self-identify as being incontinent were the target population. Women who were over age 30 years old, of Korean origin, and self-identified as being incontinent were invited to participate in the study.

The formula by Cohen (1988) was used to determine sample size given an effect size index, which he calls \( L \). For this study, the sample size was calculated as a function of relevant effect size in regression analysis. The effect size in regression analysis was indicated by the \( R^2 \) and \( L \). \( L \) was defined by Cohen as a function of power and number of independent variables at a given level of alpha. Conventionally, in a power analysis, the value of alpha was set at 0.05. \( L \) was obtained by using the \( L \) table. Using Cohen’s advocated 0.80 as the level of power, Cohen defines a small effect as an \( R^2 \) of .02, a
moderate effect as an $R^2$ of .13, and a large effect as an $R^2$ of .30. Cohen and Cohen (1983) provided a formula for determining sample size as follows:

$$N = \frac{L (1-R^2)}{R^2} + K + 1$$

Where $N$=total sample

$L$=effect size index

$K$=number of independent variables

With 17 independent variables, in multiple regression analysis with an alpha of .05, $L$ value of 20.14, and a power of .80, a sample size of 154 was required to have sufficient power to detect a medium effect size.

**Data Collection**

Participant recruitment was conducted in 11 Korean churches and one temple in Tucson, Phoenix, and Sierra Vista in Arizona. Announcements in weekly church and temple bulletins were used as a strategy of recruitment. The researcher attended a Sunday service in churches and a temple in Arizona. The researcher placed announcements in the bulletins of the Korean churches and the temple with the permission of pastors and a chief monk. The researcher made an announcement during the services, asking congregants to note the announcement. The purposes of the study and subject selection criteria were publicized. The researcher said that she would be outside after services, if anyone would like to talk to her, ask questions, or get more information about the study.

If someone approached the researcher after services, the researcher answered any questions. When inclusion criteria had been verified, the researcher provided the woman
with a copy of the disclaimer to read. If the person volunteered to participate, she was asked to participate in an in-person, confidential interview in the Korean language with the researcher. The questionnaires could be completed at the churches or the researcher arranged an appointment at a date and time convenient to the participant. Questionnaires included 1) Demographic Information Questionnaire, 2) the HSB Scale, 3) the Brief ARSKA-II, 4) the Family Tradition and Authority Orientation Scale, 5) the Incontinence Quiz Scale, 6) the Social Support Scale, 7) the Incontinence Severity Index Scale, and 8) the Incontinence-QOL Scale.

Protection of Human Subjects

Institutional Review Board approval at the University Human Subjects Committee was obtained on March 22, 2006 (Appendix A). The application addressed the risk to benefit ratio, disclaimer, and confidentiality associated with this study. Since Korean women might have been embarrassed to discuss their problems related to UI, strategies were built into the research method to minimize this possibility, including the recruitment strategy and interviewing participants in a private, supportive and non-confrontational manner. Benefits included include gaining access information about referrals, available health care services and a health promotion program for UI in the community. The other benefits to participants included having an opportunity to share their UI experience and having a sense of helping others who were suffering with them. Participants were given the assurance that they could withdraw from the research without fear of reprisal or denial of service.
Instruments

Measurement instruments included the Demographic Information Questionnaire, the HSB Scale, the Brief ARSKA-II, the Family Tradition and Authority Orientation Scale, the Incontinence Quiz Scale, the Social Support Scale, the Incontinence Severity Index Scale, and the Incontinence-QOL Scale. Each instrument was translated into Korean and back translated into English. Five instruments (the Brief ARSKA-II, the Family Tradition and Authority Orientation Scale, the Incontinence Quiz Scale, the Social Support Scale, and the Incontinence-QOL Scale) were pilot tested with targeting 22 bilingual Korean immigrant women who are experiencing UI to measure if the instruments were appropriately translated and understandable.

Demographic Information Questionnaire

Biological risk factors, marital status, social structure, preference for a female health care provider, and family and community resources were obtained by using the Demographic Information Questionnaire (Appendix B). Four biological risk factors of UI were measured: age, the number of vaginal child births, menopause status, and hysterectomy. Age and the number of child births were measured as continuous variables. Menopause status and hysterectomy were measured as dichotomous variables. Menopause status was coded “1” for postmenopausal and “0” for premenopausal. For having undergone a hysterectomy, yes was given “1” and no was given “0”. Marital status was also asked of subjects.

Questions for measuring social structure included education and employment status. Educational level was measured by the years of school. Employment status was
measured by three levels: employed, unemployed or retired. Preference for a female health care provider was measured by a question whether the subjects preferred seeing a female health care provider. Yes was given “1” and no was given “0” for both questions.

Family and community resources in this study included health insurance, a regular source of health care, transportation, and annual family income. Having health insurance was answered with dichotomous responses: yes was given “1” and no was given “0”. Information was also sought about the specific kind of insurance. Having a regular source of health care was answered with dichotomous responses. Yes was given “1” and no was given “0”. Transportation was measured by a question about whether the woman needed help with transportation when she sought health services. Yes was given “1” and no was given “0”. Lastly, annual family income were classified as three (≤ $9,999, ≥ $10,000 and ≤ $39,999, or ≥ $40,000).

Help-Seeking Behavior Scale

The HSB Scale, which measured the response to UI, consisted of four questions (Appendix B). The first question was measured by a visual analog scale with 10 cm scale to indicate how strongly the subjects had considered seeking professional help to treat their UI symptoms. Participants draw a vertical line indicating their response along the 10 cm horizontal line between two poles (e.g., never considered and strongly considered). Scores were calculated by measuring, in centimeters, the distance of the participant’s line from 0. The second question was open ended asked about the reasons why they had not considered seeking professional help. The third question was asked whether they have
sought help for urine leakage. Responses were “yes” or “no”. The last question was open ended and asked about treatments they had used to deal with their UI symptoms.

**The Brief ARSKA (Acculturating Rating Scale of Korean-American)-II**

Acculturation was measured using the Brief ARSMA (Acculturating Rating Scale of Mexican-American, Cuéllar, Bastida, & Braccio, 2004)-II (Appendix B). The Brief ARSMA-II was translated into Korean and it was validated by a pilot study. The Brief ARSMA-II consists of 12 items; 6 items from the Anglo Orientation Subscale (AOS) and 6 items from the Mexican Orientation Subscale (MOS). In the Korean version of the questionnaire, the word “Spanish” was changed to “Korean”.

The six AOS items are: 2, 4, 5, 9, 10, and 12. The six KOS (Korean Orientation Subscale) items are: 1, 3, 6, 7, 8, and 11. The twelve items in the Brief ARSMA-II assess four factors; (a) language spoken (item 1, 2, and 3), (b) preference of movies and TV (item 5, 6, and 7), (c) preference of friends and literacy (item 4, 8, 9, and 12), and (d) language in which the subject thinks (item 10 and 11). These factors are assessed separately for each culture. The Brief ARSKA-II is a 5 point Likert scale. The responses options are “1” indicating “not at all” to “5” indicating “extremely often or almost always”. AOS was reversely coded to obtain the total score of the Brief ARSKA-II. The total score is the sum of all 12 multiple-choice items circled. Higher scores indicate less acculturation.

Level of acculturation was obtained using the criteria specified by Cuéllar, Arnold, and Maldonado (1995). The choices selected for each item are added and divided by the number of items on the AOS and KOS separately to obtain the raw score mean for
each scale. Raw score means were used to calculate the acculturation score. The mean KOS score was subtracted from the mean MOS to obtain the acculturation score (AOS mean-KOS mean). If the acculturation scores is less than -1.33, it is categorized as “very Korean oriented”, >-1.33 and < -.07 is categorized as “Korean oriented bicultural”, >-.07 and <1.19, “slightly Anglo oriented bicultural”, >-1.19 and <2.45 as “strongly Anglo oriented”, and greater than .245, “very Anglicized”.

The reliability of the ARSKA-II, a coefficient alpha of .88 (n=348) was obtained for the abbreviated 6-item AOS subscale and a coefficient alpha of .83 (n=348) was obtained for the abbreviated 6-item MOS subscale (Cuéllar, Bastida, & Braccio, 2004). Validity of the Brief ARSKA-II has not been reported.

The Family Tradition and Authority Orientation Scale

The Family Tradition and Authority Orientation Scale developed by Suchman (1965) measures Korean family tradition and authority (Appendix B). It is derived from Ethnocentrism Scale (9 items) which consists of three subscales; The Ethnic Exclusivity Subscale (2 items), The Friendship Solidarity Subscale (4 items), and The Family Tradition and Authority Orientation Subscale (3 items). Suchman (1965) defined ethnocentrism as the degree to which the individual interacts solely with other members of his own social or minority group.

The Family Tradition and Authority Orientation Scale consists of three questions about the importance to the individual of family customs and traditions and the degree of authority possessed by the head of the household. For example, one question states “everybody in my family usually does what the head of the house says without question”.
The responses are “agree” or “disagree”. Agreement is indicative of a higher degree of adherence to family tradition and authority. Agree was given “1” and disagree was given “0”. Total scores were obtained. The high degree of item reliability and communality of meaning was verified from a multivariate analysis of the intercorrelations of these nine items (Suchman, 1965).

**The Incontinence Quiz Scale**

The Incontinence Quiz Scale (Branch et al., 1994) measured knowledge and attitudes about UI (Appendix B). It consists of 14 questions. The instrument was developed to elicit beliefs and knowledge regarding the relationship of aging and UI (1 and 2), the cause of UI (3, 8 10, and 12), physician-patient discussion about UI (7 and 9), and treatment and effects of UI (4, 5, 6, 11, 13, and 14). A “correct” response is identified for each question. The response options include “agree”, “disagree”, and “don’t know”. The correct response for 6 of the 14 items (3, 6, 8, 11, 12, and 14) is “agree” and for the remaining 8 (1, 2, 4, 5, 7, 9, 10, and 13) the correct answer is “disagree”. “Don’t know” responses are counted as “incorrect”. A total score is calculated by adding the total number of “correct” responses, so the range is from 0 to 14. Higher scores indicate greater knowledge and more positive attitudes.

The reliability has not been reported for any other studies that have used the instrument (Branch et al., 1994; Keller, 1999; Blanes et al., 2001; Kubik et al., 2004). Keller (1999) administered the Incontinence Quiz Scale in a rural, Midwestern community to a sample of 120 women aged 55 and older. Branch and colleagues (1994)
administered the quiz to a sample of 1,100 men and women older than 65 years living in Massachusetts. The percentage of those answering correctly to each question was similar.

They established face and content validity of the Incontinence Quiz Scale with the use of the Agency for Health Care Policy and Research (AHCPR) Clinical Practice Guideline: Acute and Chronic Incontinence (Fantl et al., 1996) as their primary reference. They established the criterion validity of the instrument by showing that scores on the Incontinence Quiz Scale were correlated with self-designated education levels.

**The Social Support Scale**

Two questions from the study of Seow and colleagues (2000), two questions from Taylor and colleague’s study (2004) and one question developed by the PI were used to measure social support from family members, friends and available information (Appendix B). The Seow Social Support Scale (Seow et al., 2000) consisting of four questions was developed to assess emotional support from family and friends for cervical cancer screening among women aged 50-64 years in Singapore. One question is follows; “Are there any family members with whom you feel comfortable discussing a health issue, like cancer?” The response is dichotomized; ‘yes’ or ‘no’. The same question was repeated for friends. The word, cervical cancer was substituted by urinary incontinence. Yes indicated a high degree of social support from family and friends. Yes was given “1” and no was given “0”. The reliability and validity of the Social Support Scale were not reported in Seow and colleague’s study (2000).

Four questions were developed to assess the social support from family and friend for Pap testing among Vietnamese-American women (Taylor et al., 2004). Two of them
measure social support for Pap testing from family members and friends were used in this study. Responses were dichotomized to; ‘yes’ or ‘no’. The word, cervical cancer was substituted by urinary incontinence. Yes indicated high degree of social support from family and friends. Yes was given “1” and no was given “0”. The reliability and validity of the Social Support Scale were not reported in Taylor and colleague’s study (2004).

One question was added to assess available information about UI; “Have you ever been given information to help decide about seeking help for urinary incontinence?.” The response was dichotomized into; ‘yes’ or ‘no’. Yes indicated a high degree of social support from information given that facilitates seeking help. Yes was given “1” and no was given “0”.

*The Incontinence Severity Index Scale*

The Incontinence Severity Index Scale was developed in Norway to provide a simple severity index of female incontinence for use in epidemiological surveys (Sandvik et al., 1993) (Appendix B). The severity index is calculated based on frequency and amount of leakage. It is composed of 2 questions. Frequency of UI (4 levels; 1=once or less/month, 2=few times/month, 3=few times/week, and 4=every day) and amount of UI (2 levels; 1=only drops or a little, 2=more than a little). The index is calculated by multiplying the 2 responses together. The value obtained by multiplying frequency and the amount of leakage was treated as a continuous variable such as 1=1, 2=2, 3=3, 4=4, 6=5, and 8=6. The resulting index values (1-6) were further categorized into slight (1-2), moderate (3-4), and severe (5-6). Typically, slight incontinence denotes leakage of drops
a few times a month, moderate incontinence denotes daily leakage of drops, and severe
incontinence denotes larger amounts at least once a week.

The index has good levels of validity, responsiveness, and reliability. The severity
index has been validated against a 48 hour ‘pad weighting’ test. It was able to distinguish
between women with and without incontinence, and it confirmed a higher rate of UI
prevalence in middle age (Sandvik et al., 1993). It has also been shown to have good test-
retest reliability and to be sensitive to changes after hysterectomy (Hanley, Capewell, &
Hagen, 2001).

**The Incontinence-QOL Scale**

Incontinence-QOL Scale (Wagner et al., 1996) measures the wider effects of
incontinence on aspects of everyday QOL (Appendix B). The questionnaire was designed
for use in clinical trials to measure the effect of incontinence on men and women
(Wagner et al., 1996). It has 22 items, scored on a 4-point Likert scale. The responses
options are “0” indicating “extremely” to “4” indicating “not at all”. Scores are summed
and then transformed to a 0-100 scale to facilitate interpretation, with a higher number
representing a better QOL. Three subscales are as follows; avoidance and limiting
behavior (8 items: 1, 2, 3, 4, 10, 11, 13, and 20); psychosocial impacts (9 items: 5, 6, 7, 9,
15, 16, 17, 21 and 22), and social embarrassment (5 items: 8, 12, 14, 18 and 19).

The questionnaire has high levels of reliability and validity. All subscales scored
achieved high internal consistency ($\alpha=.87-93$). Psychometric information on translated
versions of the Incontinence-QOL Scale have been reported for French, Spanish,
Swedish, and German language versions (Patrick et al., 1999).
Translation of Instruments

Translation Procedure

Once the appropriate instruments; the Brief ARSKA-II, the Family Tradition and Authority Orientation Scale, the Incontinence Quiz Scale, the Social Support Scale, and the Incontinence-QOL Scale had been selected, the next step was to select a translation strategy. The revised version of Brislin’s (1970) translation process described by Jones and colleagues (2001) was selected to translate the five new measures. All instruments were translated by a bilingual person and were administered to two bilingual persons to determine whether the instruments were appropriately translated into the Korean version. When there was some awkward wording or sentences, the instrument was translated into another word or sentence. Once the translated instruments had face validity, two different bilingual persons who did not see the original version of the translate instruments were asked to do a back translation. A group discussion was held on whether the back translated version achieved cultural and language equivalence. Based on the results of this comparison, the process was repeated until the PI was satisfied that the Korean version was equivalent to the English version (Figure 4).

FIGURE 4. Adaptation of Brislin’s Translation Model (Jones et al., 2001)

*Notes: SL=Source language, TL1=First translation, BT1=First back translation, GD=Group discussion
Pilot Testing Translated Instruments

The Institutional Review Board approval from the University of Arizona Human Subjects Committee was obtained for the pilot study on January 25, 2006. The purpose of the pilot study was to test the language equivalence of the five newly translated Korean versions. In the pilot study, 22 participants who are bilingual Korean and English, over 30 year-old and identified as being incontinent were recruited from four Korean churches in Arizona. The invitation for study participation was announced in weekly bulletin board in the churches. The Korean and English versions were administered in random order to participants and then participants were queried for their opinions about the equivalence and understandability of the Korean and English measures.

The equivalence of the new Korean version and the original English version was evaluated by comparing the scores of 22 bilingual (Korean/English) women on both versions of the questionnaires. Data analysis included correlations between total scores of both versions (English and Korean) and internal consistency. The final revision of the new Korean measures was performed based upon findings of this pilot study. The psychometric properties of the newly translated five instruments will be discussed in chapter 4.

Data Analysis

The Statistical Package for Social Sciences (SPSS) version of 14.0 was utilized for data analysis. Descriptive statistics were used to summarize the results of each independent variable and dependent variable. To answer research questions the following analyses were performed. Standardized Cronbach’s alpha coefficients, Pearson
correlation coefficient, and factor analysis were performed to respond the first research question, evaluating the psychometric properties of newly translated five instruments.

For responding to the second research question, variables that were hypothesized as predictor variables of HSB were analyzed using hierarchical multiple regression. The formula of a multiple regression was as follows: 

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_{17} X_{17} + \varepsilon_i \]

(\(Y = \text{HSB}, \beta_0 = \text{constant}, \beta_1 = \text{the coefficient of the first predictor (} X_1)\), \(\varepsilon_i = \text{the difference between the predicted and the observed value of } Y \text{ for the } i^{\text{th}} \text{ subject}\) (Field, 2000). The order of entry of the predictors is based on logical or theoretical considerations (Munro, 2005). For the present study, predisposing factors including biological risk factor composite, culture composite, health beliefs, and social structure were entered in that order. Then, family and community resources factors including health care support composite, social support, and transportation were added in the regression model. Finally, perceived need factors including severity of UI and Incontinence-QOL were added into the model. Multiple regression analyses were conducted to test the third and fourth questions. For all analyses, \(p < .05\) was considered statistical significant.

Summary

This chapter has presented the research design, target population and selection criteria, data collection, protection of human subjects, the instruments to be used, instruments translation procedure, and data analysis.
CHAPTER FOUR: RESULTS

This chapter describes the analyses of data and findings related to each research question. The first part describes preparation for data analysis including the management of missing data, construction of composite variables and checking assumptions of multiple regression. The second part presents the descriptions of the sample and each predictor variable. The third part reports the results of statistical analyses related to each research question. The last part describes the results of testing the final model.

Missing Data Management

Prior to analysis, the missing data were explored. Fourteen participants (9.4%) chose not to report their annual family income and four participants (2.7%) had data on education missing. Missing data could have been an important issue in this study. Improper handling of missing values can distort analysis because, until proven otherwise, the researcher must assume that missing cases differ in analytically important ways from cases where values are present. The problem with missing values is not so much reduced sample size as it is the possibility that the remaining data set is biased. Missing data in multivariate analysis have serious implications that threaten the reliability and validity of conclusions (Cook & Campbell, 1979).

Missing data were analyzed for the nature of missingness by comparing demographic variables of participants who responded with participants who did not respond using t-test or Chi-square. There were no significant differences between the two groups in both annual family income and education level. Thus, the missing values could be considered missing completely at random.
The most common approaches to dealing with missing data can be classified into two major categories: missing data imputation and missing data deletion (Figueroedo, McKnight, McKnight & Sidani, 2000). Data imputation can lead to the minimization of bias and the use of data that would otherwise be discarded by case deletion. However, it could also allow data to influence the type of imputation (Gionvannini et al., 2005).

Missing data deletion simply omits the cases with missing data from the analysis. However, this approach ignores possible systemic differences between complete and incomplete samples and produces unbiased estimates only if deleted cases are a random sub-sample of the original sample (the assumption of missing completely at random) (Gionvannini et al., 2005). Case deletion leads to reduced sample size which may threaten the validity of the data analysis. In general, standard errors are larger in a reduced sample given that less information is used. As a rule of thumb, if a variable has more than 5% missing values, cases are not deleted (Little & Rubin, 2002). Missing data was more than 5% for income (9%) and less than 5% for education level (2.7%). As a result, the annual family income variable was deleted from the conceptual framework to preserve sufficient sample size for multiple regression. The mean substitution of all participants was used to replace the missing values of education.

Constructing Composite Variables

Composite variables are constructed to reduce the numbers of the predictors based on the theoretical relevance of the predictors in the conceptual framework. The strengths and weakness of composite factors largely derive from the quality of the underlying variables. Ideally, variables should be selected on the basis of their relevance and
analytical soundness (Giovannini et al., 2005). In this study, the three composite variables, the biological risk factor, culture, and health care support, were constructed based on their theoretical relevance, correlations among them, and factor analysis. Composite variables were constructed by multiplying each item by its factor loading and summing the result.

**Biological Risk Factor Composite**

The theoretical relevance of four variables was proposed in the conceptual framework. Although inconsistent findings on biological risk factors have been reported because of different definitions of UI and research designs, age, the number of vaginal childbirths, menopause, and having had a hysterectomy have been the most commonly reported biological risk factors for incontinence in women (Luft, Vriheas-Nichols, 1998; Holroyd-Leduc & Straus, 2004). These four variables were categorized as predisposing demographic factors in predicting HSB among Korean American women with UI. They could be regarded as a one variable as long as the composite variable contains all information about the risk factors for UI.

Correlations among the four variables are shown in Table 1. Age was positively correlated with the number of childbirths ($r=.217, p<.01$), menopausal status ($r=.747, p<.01$) and having had a hysterectomy ($r=.229, p<.01$). Menopausal status was positively correlated with having had a hysterectomy ($r=.327, p<.01$). Table 2 displays the result of factor analysis to construct a composite variable, biological risk factor. A principal axis factoring with one factor solution was used. Principal axis factoring method was selected based on assumptions that individual variables may have shared variance and that factors
may be correlated (Ferketich & Muller, 1990). The four variables had loadings from .25 to .91 explaining 48.7% of the variance.

TABLE 1. Description of Correlation Matrix on Biological Risk Factors (N = 149)

<table>
<thead>
<tr>
<th></th>
<th>Age (N = 149)</th>
<th>The number of childbirths</th>
<th>Menopause</th>
<th>Hysterectomy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-</td>
<td>.217**</td>
<td>.747**</td>
<td>.229**</td>
</tr>
<tr>
<td>The number of childbirths</td>
<td>-</td>
<td>.102</td>
<td>-</td>
<td>-.100</td>
</tr>
<tr>
<td>Menopause</td>
<td>-</td>
<td></td>
<td>.327**</td>
<td>-</td>
</tr>
<tr>
<td>Hysterectomy</td>
<td>-</td>
<td></td>
<td></td>
<td>-</td>
</tr>
</tbody>
</table>

*Note. *p < .05, **p < .01

TABLE 2. A Confirmatory Factor Analysis of Biological Risk Factor with a Principal Axis Factoring Method with One Factor Forced (N = 149)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Trial 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>.90</td>
</tr>
<tr>
<td>The number of childbirths</td>
<td>.25</td>
</tr>
<tr>
<td>Menopause</td>
<td>.91</td>
</tr>
<tr>
<td>Hysterectomy</td>
<td>.51</td>
</tr>
<tr>
<td>% of variance</td>
<td>48.7</td>
</tr>
</tbody>
</table>

Culture Composite

The theoretical relevance of three variables to measure culture was proposed in the conceptual framework. The culture composite contained information about low acculturation, adherence of family tradition and authority, and preference for a female
health care provider. These three variables were categorized as predisposing cultural factors in predicting HSB among aging Korean American women with UI.

Correlations among the three variables are shown in Table 3. Low acculturation was positively correlated with the preference for a female health care provider ($r=0.281$, $p<0.01$). Adherence to family tradition and authority was positively correlated with preference for a female health care provider ($r=0.191$, $p<0.05$). A factor analysis was performed to create a composite variable of culture. Table 4 displays the result of factor analysis. Three variables were loaded into one factor from 0.52 to 0.79 explaining 45.6% of the variance.

**TABLE 3. Description of Correlation Matrix on Culture (N =149)**

<table>
<thead>
<tr>
<th></th>
<th>Low acculturation</th>
<th>Adherence of family tradition and authority</th>
<th>Preference for a female health care provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low acculturation</td>
<td>-</td>
<td>0.056</td>
<td>0.281**</td>
</tr>
<tr>
<td>Adherence of family</td>
<td></td>
<td>-</td>
<td>0.191*</td>
</tr>
<tr>
<td>tradition and authority</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preference for a female health care provider</td>
<td>-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. *$p<0.05$, **$p<0.01$*
TABLE 4. *A Confirmatory Factor Analysis of Culture with a Principal Axis Factoring Method with One Factor Forced (N =149)*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Trail 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low acculturation</td>
<td>.69</td>
</tr>
<tr>
<td>Adherence of family tradition and authority</td>
<td>.52</td>
</tr>
<tr>
<td>Preference for a female health care provider</td>
<td>.79</td>
</tr>
<tr>
<td>% of variance</td>
<td>45.6</td>
</tr>
</tbody>
</table>

*Family and Community Resources Composite*

The theoretical relevance of four variables was proposed in the conceptual framework to measure family and community resources in predicting HSB among Korean American women with UI. Correlations among the four variables are shown in Table 5. Health insurance was positively correlated with social support ($r = .184, p < .05$) and having a regular source of health care ($r = .541, p < .01$). Table 6 displays the result of factor analysis to construct a composite variable, family and community resources. Four variables were loaded into one factor from -.11 to .89 explaining 41.1% of the variance.

Although social support was negatively correlated with health insurance ($r = -.184, p < .05$), theoretically, social support could be differentiated from support for health access such as a health insurance or having a regular visit of health care. Transportation was negatively loaded. The correlation matrix of transportation showed that transportation was not associated with either health insurance ($r = .136$), social support ($r = -.066$), or having a regular source of health care ($r = .001$). Theoretically, transportation could be categorized into community resources rather personal/family resources. Consequently,
social support and transportation were deleted from the composite variable and separated. A second analysis was performed and it explained 77.0% of the variance. Health care support composite was created from health insurance and having a regular source of health care.

TABLE 5. Description of Correlation Matrix on Family and Community Resources (N =149)

<table>
<thead>
<tr>
<th></th>
<th>Health insurance</th>
<th>Social support</th>
<th>A regular source of health care</th>
<th>Transportation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health insurance</td>
<td>-</td>
<td>184*</td>
<td>.541**</td>
<td>-.132</td>
</tr>
<tr>
<td>Social support</td>
<td>-</td>
<td>-</td>
<td>136</td>
<td>-.066</td>
</tr>
<tr>
<td>A regular source of</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>health care</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. *p<.05, **p<.01

TABLE 6. A Confirmatory Factor Analysis of Family and Community Resources with a Principal Axis Factoring Method with One Factor Forced (N =149)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Trial 1</th>
<th>Trial 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health insurance</td>
<td>.89</td>
<td>.74</td>
</tr>
<tr>
<td>Social support</td>
<td>.22</td>
<td>-</td>
</tr>
<tr>
<td>A regular source of health care</td>
<td>.60</td>
<td>.74</td>
</tr>
<tr>
<td>Transportation</td>
<td>-.11</td>
<td>-</td>
</tr>
<tr>
<td>% of variance</td>
<td>41.1</td>
<td>77.0</td>
</tr>
</tbody>
</table>

Based on construction of composite variables specific hypotheses to be tested in this study have been revised as follows: 1) HSB is positively influenced by (a) knowledge...
and attitudes about UI, (b) education, (c) employment, and (d) family and community resources composite (health care support composite, social support, and transportation), and (e) the severity of UI and HSB is negatively influenced by (f) culture composite and (g) the Incontinence-QOL, 2) Severity of UI acts as a mediator to biological risk factor composite and HSB, and 3) Family and community resources composite (health care support composite, social support, and transportation) act as moderators between perceived need (severity of UI and Incontinence-QOL) and HSB. The revised conceptual framework by constructing composite variables was presented in Figure 5.
FIGURE 5. Revised Conceptual Framework of Help-Seeking Behavior Among Aging Korean American Women with Urinary Incontinence

Predisposing Factors

- Biological risk factor composite
- Culture composite
- Health Beliefs
  - Knowledge and attitudes about UI
- Social Structure
  - Education
  - Employment

Need Factors

- Perceived Need
  - Severity of UI
  - Incontinence-QOL

Help-Seeking Behavior

Enabling Factors

- Family & Community Resources composite
  - Health care support composite
  - Social support
  - Transportation
Checking Assumptions of Multiple Regression

To draw conclusions about a population based on a regression analysis, the assumptions related to multicollinearity and homoscedasticity were checked (Berry, 1993).

**Multicollinearity**

Multicollinearity exists when there is a strong correlation between two or more within stage predictors in a regression model. Since there should be no perfect linear relationship between two or more of the predictors, the predictor variables should not be correlated highly. If two predictors are highly correlated or if one predictor has a large multiple correlation with the other predictors, there is said to be multicollinearity (Field, 2005). Multicollinearity was examined using a Pearson’s product-moment correlation analysis of all predictor variables and to see if any correlated at above .80 or .90 (Field, 2005). Employment status was recoded as a dichotomous variable (employed=1, unemployed or retired=0). The description of the relationships between independent variables was established using the Pearson product moment correlation coefficient for continuous variables or point-biserial correlation coefficient ($r_{pb}$) for dichotomous variables. Phi correlation coefficient ($r_{pa}$) was used for the relationships between both dichotomous variables. The correlation matrix illustrates bivariate correlations among the predictor variables (Table 7).

The highest correlations among predictors were identified. These were seven significant negative correlations: 1) biological risk factor composite with health beliefs ($r = -.207, p < .05$), 2) biological risk factor composite with education ($r = -.401, p < .01$), 3) biological risk factor composite with employment ($r_{pb} = -.292, p < .01$), 4) culture and
health care support composite ($r = -0.256, p < 0.01$), 5) education and health care support composite ($r = -0.233, p < 0.01$), 6) social support and Incontinence-QOL ($r = -0.277, p < 0.01$), and 7) transportation and Incontinence-QOL ($r_{pb} = -0.219, p < 0.01$).

These were four positive correlations: 1) biological risk factor composite with health care support composite ($r = 0.300, p < 0.01$), 2) biological risk factor composite with transportation ($r_{pb} = 0.258, p < 0.01$), 3) culture composite and transportation ($r_{pb} = 0.216, p < 0.01$), and 4) health care support composite and social support ($r = 0.181, p < 0.05$). Overall the predictor variables were not highly correlated and one predictor did not have a large multiple correlation with the other predictors, therefore, the assumption of non-multicollinearity was met.
<table>
<thead>
<tr>
<th></th>
<th>BRF com.</th>
<th>Culture com.</th>
<th>HB</th>
<th>Soc. structure</th>
<th>FCR com.</th>
<th>P. Need</th>
<th>HSB</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BRF com.</td>
<td>-</td>
<td></td>
<td>.040</td>
<td>-.207*</td>
<td>-.401**</td>
<td>-.292**</td>
<td>.300**</td>
</tr>
<tr>
<td>Culture com.</td>
<td>-</td>
<td>.056</td>
<td>-.029</td>
<td>-.154</td>
<td>-.256**</td>
<td>.074</td>
<td>.216**</td>
</tr>
<tr>
<td>HB</td>
<td>-</td>
<td></td>
<td>.014</td>
<td>.034</td>
<td>-.116</td>
<td>.062</td>
<td>.009</td>
</tr>
<tr>
<td>Soc. structure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td>-.233**</td>
<td>.076</td>
<td>-.096</td>
<td>-.047</td>
</tr>
<tr>
<td>Employ</td>
<td></td>
<td></td>
<td></td>
<td>-.052</td>
<td>-.001</td>
<td>-.155</td>
<td>-.056</td>
</tr>
<tr>
<td>FCR com.</td>
<td></td>
<td></td>
<td></td>
<td>-.181*</td>
<td>-.071</td>
<td>-.037</td>
<td>-.130</td>
</tr>
<tr>
<td>HS com.</td>
<td></td>
<td></td>
<td></td>
<td>-.066</td>
<td>.130</td>
<td>-.277**</td>
<td>.372**</td>
</tr>
<tr>
<td>SS</td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Trans</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.219**</td>
<td>-.001</td>
</tr>
<tr>
<td>P. Need</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Severity</td>
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<td></td>
<td></td>
<td></td>
<td>-.456**</td>
<td></td>
</tr>
<tr>
<td>I-QOL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HSB</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Homoscedasticity

The formula of a multiple regression was as follows: \( Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_{10} X_{10} + \varepsilon_i \) (\( Y \) = dependent variable, \( \beta_0 \) = constant, \( \beta_1 \) = the coefficient of the first predictor (\( X_1 \)), \( \varepsilon_i \) = the difference between the predicted and the observed value of \( Y \) for the \( i \)th subject) (Field, 2005). A lack of equality of variance across all \( \varepsilon_i \) is best seen by plotting the standardized residuals against the predicted dependent variable (\( Y \)). At each level of predictor variables, the variance of the residual terms should be constant. This means that the residuals at each level of the predictors should have similar variances (homoscedasticity); when the variances are very unequal there is said to be heteroscedasticity (Field, 2005). To check this assumption, the residuals can be plotted against the predicted values and against the independent variables. According to Ferketich (1982), figure 6 shows a residual pattern that does not offer evidence of heteroscedasticity. Then, the assumption of homoscedasticity was met.
FIGURE 6. Plot of Standardized Residuals Against Standardized Predicted Values of the Regression Model of Predictors in Help-Seeking Behavior

Description of Sample

The sample consisted of 149 aging Korean American women who reported having UI symptoms. Means, standard deviations, ranges, frequencies, and percentages for demographic variables are presented in Table 8. Data collection was conducted in three local areas in Arizona: Tucson (49.7%), Phoenix (43.6%), and Sierra Vista (6.7%). One hundred twenty five (83.9%) respondents were married. The mean age of the sample was 51.2 years (SD =10.8). The mean number of childbirths was 2.1 (SD =1.2) with a
frequency of 0-7. Eighty six (57.7%) respondents were postmenopausal and 19 (12.8%) had undergone hysterectomies.

The means number of years of education was 12.7 years (SD =3.75) with a range of 0-20. The respondents were not highly educated. Four subjects (2.7%) were never given formal education. One hundred seventeen (71.9%) graduated with, less than bachelor’s degree and 28.1% graduated with a bachelor degree or higher. Less than half of the respondents (40.9%) were employed. Almost half of the respondents (42.9%) reported annual family incomes less than $39,999.

All were born in Korea and migrated to the U.S. Acculturation level of the sample was “Korean oriented bicultural”. Seventy six (51.0%) respondents were “very Korean oriented”, 31 (20.8%) were “Korean oriented bicultural”, 26 (17.4%) were “slightly Anglo oriented bicultural”, 10 (6.7%) were “strongly Anglo oriented” and 6 (4.0%) subjects were “very Anglicized”.
TABLE 8. Description of Sample (N =149)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>125</td>
<td>83.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>7</td>
<td>4.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Separated</td>
<td>1</td>
<td>.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Widow</td>
<td>16</td>
<td>10.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Biological risk factors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>51.2</td>
<td>10.8</td>
<td>32-87</td>
<td></td>
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</tr>
<tr>
<td>32-39</td>
<td>18</td>
<td>12.1</td>
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<td>40-49</td>
<td>49</td>
<td>32.9</td>
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<td>50-59</td>
<td>48</td>
<td>32.2</td>
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<tr>
<td>Over 60</td>
<td>34</td>
<td>22.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of vaginal childbirths</td>
<td>2.1</td>
<td>1.2</td>
<td>0-7</td>
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<td><strong>Menopause status</strong></td>
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<td>Premenopausal</td>
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<tr>
<td>Postmenopausal</td>
<td>86</td>
<td>57.7</td>
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<td><strong>Hysterectomy</strong></td>
<td></td>
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<tr>
<td>Yes</td>
<td>19</td>
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<tr>
<td>No</td>
<td>128</td>
<td>85.9</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Education (years)</td>
<td>12.7</td>
<td>3.75</td>
<td>0-20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than high school diploma</td>
<td>28</td>
<td>18.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school diploma</td>
<td>60</td>
<td>40.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some college/associated degree</td>
<td>19</td>
<td>12.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bachelor’s degree or higher</td>
<td>42</td>
<td>28.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Employment status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>61</td>
<td>40.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployed</td>
<td>55</td>
<td>36.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retired</td>
<td>33</td>
<td>22.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Annual family income</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than $9,999</td>
<td>20</td>
<td>13.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$10,000-39,999</td>
<td>44</td>
<td>29.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>More than $40,000</td>
<td>71</td>
<td>47.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>14</td>
<td>9.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acculturation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very Korean oriented</td>
<td>76</td>
<td>51.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Korean oriented to balanced bicultural</td>
<td>31</td>
<td>20.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slightly Anglo oriented bicultural</td>
<td>26</td>
<td>17.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Anglo oriented</td>
<td>10</td>
<td>6.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very Anglicized</td>
<td>6</td>
<td>4.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: SD = Standard deviation, No.= Number, % = Percent.
Description of Predictors and Dependent Variables

Predisposing predictors included biological risk factor composite, culture composite, health beliefs and social structure. Enabling factors consisted of family and community resources and need factors focuses on perceived need.

*Biological Risk Factor Composite*

Biological risk factor composite was constructed from four variables: age, the number of childbirths, menopause status, and hysterectomy. The mean of composite variable, biological risk factor, was 43.15 (SD=9.26) ranging from 26.69-73.31. The means, standard deviations, ranges, frequency and percent of each variable were presented in Table 8.

*Culture Composite*

The culture composite was constructed from three variables. The Brief ARSKA-II, the Family Tradition and Authority Orientation Scale and one question about the preference for a female health care provider were used to measure cultural variables (Table 9). The mean of culture composite variable was 31.84 (SD=7.39) ranging from 11.91-43.75.

The mean of the Brief ARSKA-II was 42.66 (SD =10.46) with a range of 15-60, indicating that the sample was ‘Korean oriented to approximately balanced bicultural’.

Individual items of the two subscales of the Brief ARSKA-II are presented in Table 10. The responses options of the each item are “1” indicating “not at all” to “5” indicating “extremely often or almost always”. Overall, the means of individual item in the KOS was higher than that of AOS.
The mean of the three-item Family Tradition and Authority Orientation Scale was 1.76 (SD =1.05) indicating middle degree of adherence to family tradition and authority.

Table 11 displays the detail of The Family Tradition Authority Orientation Scale. One hundred and eight (72.5%) and 88 (59.1%) agreed to the first and third questions, while 63 (42.3%) answered agree for the second question. Ninety six (64.4%) respondents had a preference for a female health care provider.

TABLE 9. Description of Sample on Culture of HSB for UI (N =149)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Possible range of scores</th>
<th>Range</th>
<th>Mean</th>
<th>SD</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Culture</td>
<td>11.91-43.75</td>
<td>31.84</td>
<td>7.39</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Brief ARSKA-II</td>
<td>12-60</td>
<td>15-60</td>
<td>42.66</td>
<td>10.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Tradition &amp; Authority Orientation Scale</td>
<td>0-3</td>
<td>0-3</td>
<td>1.76</td>
<td>1.05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preference for a female health care provider</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td>96</td>
<td>64.4</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td>53</td>
<td>35.6</td>
</tr>
</tbody>
</table>

Note: SD = Standard deviation, No.= Number, % = Percent.
TABLE 10. Description of Sample on the Brief ARSKA-II Scale of HSB for UI (N=149)

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Korean Orientation Subscale</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. I speak Korean</td>
<td>3.81</td>
<td>1.30</td>
<td>1-5</td>
</tr>
<tr>
<td>3. I enjoy speaking Korean</td>
<td>4.04</td>
<td>1.27</td>
<td>1-5</td>
</tr>
<tr>
<td>6. I enjoy Korean language TV</td>
<td>3.24</td>
<td>1.52</td>
<td>1-5</td>
</tr>
<tr>
<td>7. I enjoy Korean language movies</td>
<td>2.93</td>
<td>1.41</td>
<td>1-5</td>
</tr>
<tr>
<td>8. I enjoy reading books in Korean</td>
<td>3.83</td>
<td>1.41</td>
<td>1-5</td>
</tr>
<tr>
<td>11. My thinking is done in the Korean language</td>
<td>4.07</td>
<td>1.26</td>
<td>1-5</td>
</tr>
<tr>
<td><strong>Anglo Orientation Subscale</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I speak English</td>
<td>3.03</td>
<td>1.32</td>
<td>1-5</td>
</tr>
<tr>
<td>4. I associate with Anglos</td>
<td>2.86</td>
<td>1.37</td>
<td>1-5</td>
</tr>
<tr>
<td>5. I enjoy listening to English language movies</td>
<td>2.99</td>
<td>1.41</td>
<td>1-5</td>
</tr>
<tr>
<td>9. I write letters in English</td>
<td>1.97</td>
<td>1.22</td>
<td>1-5</td>
</tr>
<tr>
<td>10. My thinking is done in the English language</td>
<td>2.15</td>
<td>1.29</td>
<td>1-5</td>
</tr>
<tr>
<td>12. My friends now are of Anglo origin</td>
<td>2.26</td>
<td>1.33</td>
<td>1-5</td>
</tr>
</tbody>
</table>

Note: SD = standard deviation.

TABLE 11. Description of Sample on the Family Tradition Authority Orientation Scale of HSB for UI (N=149)

<table>
<thead>
<tr>
<th>No</th>
<th>Agree No.</th>
<th>Agree %</th>
<th>Disagree No.</th>
<th>Disagree %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>108</td>
<td>72.5</td>
<td>41</td>
<td>27.5</td>
</tr>
<tr>
<td>2</td>
<td>63</td>
<td>42.3</td>
<td>86</td>
<td>57.7</td>
</tr>
<tr>
<td>3</td>
<td>88</td>
<td>59.1</td>
<td>61</td>
<td>40.9</td>
</tr>
</tbody>
</table>

Notes: No.=Number, % = Percent.
Health Beliefs

Knowledge and Attitudes About UI

The Incontinence Quiz Scale was used to measure health beliefs and attitudes about UI. Total scores on the 14-item quiz were calculated. The mean of the Incontinence Quiz Scale was 4.97 (36%, SD=2.69) out of 14 (100%) which was much lower than midpoint of 7.0 indicating that respondents had negative health beliefs and attitudes toward UI (Table 12). None of the respondents answered all items correctly. Four respondents (2.7%) answered all items incorrectly and 24 respondents (16.2%) answered eight or more items correctly. The mode was seven correct answers.

TABLE 12. Description of Sample on Incontinence Quiz Scale of HSB for UI (N=149)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Possible range of scores</th>
<th>Range</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incontinence Quiz Scale</td>
<td>0-14</td>
<td>0-12</td>
<td>4.97</td>
<td>2.69</td>
</tr>
</tbody>
</table>

*Note: SD = Standard deviation.*

The description of each item of the Incontinence Quiz Scale is shown in Table 13. Items are presented according to the four scale categories: treatments and effects of UI, causes of UI, physician-patient discussion about UI, and relationship of aging and UI.

*Treatments and Effects of UI.* Six (#1, #2, #3, #7, #8, and #9) of the 14 statements in the questionnaire pertained to treatment and effects of UI. Three statements are true (#1, #2, and #3) and three are false (#7, #8, and #9). More than half of the respondents (58%) correctly agreed with statement #1 (“most people who currently have involuntary urine loss live normal lives”). In addition, 27.5% of the respondents answered “don’t know/uncertain”. Half of the respondents (48%) correctly agreed with statement #2
(“many people with involuntary loss can be cured and almost everyone can experience significant improvement”). In addition, 47.7% (#2) respondents answered “don’t know/uncertain”. Most respondents (69.8%) were aware that there are specific exercises to treat UI (#3). Twenty nine percent (#3) of the respondents answered “don’t know/uncertain”.

Forty percent of the respondents correctly disagreed with the statement #7 (“once people start to lose control of their urine on a regular basis, they usually never regain complete control over it again”). In addition, 45.6% (#7) of the respondents answered “don’t know/uncertain”. While most respondents (69.8%) were aware that there are specific exercises to treat UI (#3), the answer to statement #8 (“the best treatment for involuntary urine loss is usually surgery”) reflected scant knowledge of the sample about surgery to treat UI with only 35.6% of the respondents having correct answers. Forty six percent (#8) of the respondents answered “don’t know/uncertain”. Although not specifically identifying UI treatment modalities that could be used in addition to commonly used absorbent products, 48.3% correctly disagreed with the false statement #9 (“other than pads, diapers, and catheters, little can be done to treat or cure involuntary urine loss”). In addition, 43.6% of the respondents answered “don’t know/uncertain”. The results indicated that majority of the respondents are unaware of the available treatments and effects of UI.

Causes of UI. True statements (#4, #5, and #6) and one false statement (#12) are related to knowledge about the causes of UI. For the statement “involuntary loss of urine can be caused by several easily treatable medical conditions” (#4), 60.4% of the
respondents were uncertain, 30.2% agreed, and 9.4% disagreed. Most of the correct answers in this category were found to statement #5 ("women are more likely than men to develop urinary incontinence") (74.5% agreement). The least number of the correct answers in this category involved statements #6 (16.1% agreement with #6—a true statement, "many over-the-counter medications can cause involuntary urine loss") and #12 (16.1% disagreement with #12—a false statement, "involuntary urine loss is caused by only one or two conditions"). In addition, 69.8% (#6) and 70.5% (#12) of the respondents answered “don’t know/uncertain” respectively. The results indicated although the respondents were aware that UI is more prevalent in women, they are not knowledgeable about the causes of UI.

Relationship of Aging and UI. Two (#11 and #13) of the 14 statements in the questionnaire refer to the relationship between aging and UI. Both are false statements and the correct answer is “disagree”. These statements elicited correct answers (disagreement) among 12.8% and 18.1% of the respondents, respectively. Results indicated that most respondents wrongly believed UI was a part of the normal aging process.

Physician-Patient Discussion About UI. This questionnaire category involved two false statements (#10 and #14) associated with physician-patient discussions about UI. The results indicated that 18.1% of the respondents disagreed with the false statement #14 ("most people with involuntary urine loss talk to their doctors about it"), yet they are not sure about statement #10 ("most physicians ask their older patients whether they have
bladder control problems”) (42.3% agreed, 46.3% uncertain and 11.4% disagreed with the false statement).

Overall, correct responses varied from 11.4% to 74.5%. More than 50% of respondents answered correctly for only three items (#1, #3, and #5). The most frequently correctly answered (74.5%) item was statement #5 (‘women are more likely than men to develop urinary incontinence”) and the least frequently correctly answered (11.4%) item was statement #7 (“most physicians ask their older patients whether they have bladder control problems”).
### TABLE 13. Description of Sample on the Incontinence Quiz Scale of HSB for UI (N = 149)

<table>
<thead>
<tr>
<th>True Statements</th>
<th>Agree No. (%)</th>
<th>Disagree No. (%)</th>
<th>Uncertain No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 T</td>
<td>86 (57.7)</td>
<td>22 (14.8)</td>
<td>41 (27.5)</td>
</tr>
<tr>
<td>2 T</td>
<td>72 (48.3)</td>
<td>6 (4.0)</td>
<td>71 (47.7)</td>
</tr>
<tr>
<td>3 T</td>
<td>104 (69.8)</td>
<td>2 (1.3)</td>
<td>43 (28.9)</td>
</tr>
<tr>
<td>4 C</td>
<td>45 (30.2)</td>
<td>14 (9.4)</td>
<td>90 (60.4)</td>
</tr>
<tr>
<td>5 C</td>
<td>111 (74.5)</td>
<td>1 (.7)</td>
<td>37 (24.8)</td>
</tr>
<tr>
<td>6 C</td>
<td>24 (16.1)</td>
<td>21 (14.1)</td>
<td>104 (69.8)</td>
</tr>
<tr>
<td>False Statements</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 T</td>
<td>21 (14.1)</td>
<td>60 (40.3)</td>
<td>68 (45.6)</td>
</tr>
<tr>
<td>8 T</td>
<td>27 (18.1)</td>
<td>53 (35.6)</td>
<td>69 (46.3)</td>
</tr>
<tr>
<td>9 T</td>
<td>12 (8.1)</td>
<td>72 (48.3)</td>
<td>65 (43.6)</td>
</tr>
<tr>
<td>10 D</td>
<td>63 (42.3)</td>
<td>17 (11.4)</td>
<td>69 (46.3)</td>
</tr>
<tr>
<td>11 A</td>
<td>76 (51.0)</td>
<td>19 (12.8)</td>
<td>54 (36.2)</td>
</tr>
<tr>
<td>12 C</td>
<td>20 (13.4)</td>
<td>24 (16.1)</td>
<td>105 (70.5)</td>
</tr>
<tr>
<td>13 A</td>
<td>97 (65.1)</td>
<td>27 (18.1)</td>
<td>25 (16.8)</td>
</tr>
<tr>
<td>14 D</td>
<td>81 (54.4)</td>
<td>27 (18.1)</td>
<td>41 (27.5)</td>
</tr>
</tbody>
</table>

*Note: No.= Number, %= Percent, A= Relationship of aging and UI, C= Causes of UI, T= Treatment and effects of UI, D= Physician-patient discussion about UI.*
**Social Structure**

Social structure was measured by education and employment status and the means, standard deviations, ranges, frequencies, and percentages of the each variable were presented in Table 8.

**Family and Community Resources Composite**

Family and community resources were measured by health insurance, a regular source of health care, the Social Support Scale, and a means of transportation (Table 14). The health care support composite was constructed from health insurances and a regular source of health care. The mean of health care support was 1.01 (SD=.60) ranging from 0-1.48. One hundred nine (73.2%) respondents reported that they had some kind of health insurance. Fifty three (48.6%) out of 109 had private insurance (spouse), other (16.5%), self pay private insurance (14.7%), Supplemental Security Income (SSI, 11.0%), or Arizona Health Care Cost Containment System (AHCCCS, 10.1%). Ninety four (63.1%) respondents reported that they had a regular source of health care. Eighty seven out of 94 identified who they were visiting for regular care. Eighty four (96.6%) out of 87 were visiting doctors and 3 (3.4%) were visiting nurse practitioners.

The mean of the Social Support Scale was 2.07 (SD =1.30) with a range of 0-5, indicating lower than midpoint. Table 15 displays the individual items of the Social Support Scale. Interestingly, while most women had someone to talk to about their UI symptoms, such as family (67.8%) and friends (75.8%), most (87.9%) had not been advised to seek health care professional help by either family members (87.9%) or friends.
(89.9%). Nineteen (12.8%) reported that they did not have a means of transportation at their convenience.

**TABLE 14. Description of Sample on Family and Community Resources of HSB for UI (N = 149)**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Possible range of scores</th>
<th>Range</th>
<th>Mean</th>
<th>SD</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health care support composite</td>
<td>0-1.48</td>
<td>1.01</td>
<td>.60</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health insurance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td></td>
<td>109</td>
<td>73.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
<td>40</td>
<td>26.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A regular source of health care</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td></td>
<td>94</td>
<td>63.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
<td>55</td>
<td>36.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Social Support Scale</td>
<td>0-5</td>
<td>0-5</td>
<td>2.07</td>
<td>1.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td></td>
<td>130</td>
<td>87.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
<td>19</td>
<td>12.8</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: SD = Standard deviation, No.= Number, % = Percent.*
TABLE 15. Description of Sample on the Social Support Scale of HSB for UI (N =149)

<table>
<thead>
<tr>
<th>Items</th>
<th>Yes</th>
<th>No</th>
<th>%</th>
<th>No</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Had family members suggested seeking health professional help because of your urinary symptoms?</td>
<td>18</td>
<td>131</td>
<td>12.1</td>
<td>87.9</td>
<td></td>
</tr>
<tr>
<td>2 Had friends suggested seeking health professional help because of your urinary symptoms?</td>
<td>15</td>
<td>134</td>
<td>10.1</td>
<td>89.9</td>
<td></td>
</tr>
<tr>
<td>3 Are there any family members with whom you feel comfortable discussing urinary incontinence?</td>
<td>101</td>
<td>48</td>
<td>67.8</td>
<td>32.2</td>
<td></td>
</tr>
<tr>
<td>4 Are there any friends with whom you feel comfortable discussing urinary incontinence?</td>
<td>113</td>
<td>36</td>
<td>75.8</td>
<td>24.2</td>
<td></td>
</tr>
<tr>
<td>5 Have you ever been given information to help decide about seeking help for urinary incontinence?</td>
<td>61</td>
<td>88</td>
<td>40.9</td>
<td>59.1</td>
<td></td>
</tr>
</tbody>
</table>

Note: No.= Number, %= Percent.

Perceived Need

Perceived need was measured by severity of UI and Incontinence-QOL Scale (Table 16).

Severity of UI

Severity of UI was measured by the frequency and the amount of urine leakage. The severity index was calculated based on frequency and amount of leakage. Mean of severity of UI was 1.93 (SD=1.35) with a range of 1-6 indicating mild symptoms of UI. The resulting index value (1-6) was further categorized into slight (1-2), moderate (3-4), and severe (5-6). One hundred twenty two (81.9%) respondents reported slight symptoms, 16 (10.8%) moderate symptoms, and 11 (7.4%) severe symptoms. More than half of the
respondents (59.7%) reported the frequency of incontinence once or less per month. More than three-quarters (78.5%) reported the amount of the urine only drops or a little.

*Incontinence-QOL*

Incontinence-QOL Scale (Wagner et al., 1996) was used to measure effects of incontinence on aspects of everyday quality of life. It has 22 items, scored on a 4-point Likert scale. The responses options are “0” indicating “extremely” to “4” indicating “not at all”. Scores are summed and the sum scores of the Incontinence-QOL were then transformed to a 0-100 scale to facilitate interpretation, with a higher number representing a better QOL. The mean of the Incontinence-QOL Scale was 83.67 (SD =17.68) with a range of 4.55-100. Almost two-third of the subjects (63.3%) reported Incontinence-QOL higher than mean. Means, standard deviations, and ranges of individual item of the Incontinence-QOL were shown in Table 17.
### TABLE 16. Description of Sample on Perceived Need of HSB for UI (N =149)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Possible range of scores</th>
<th>Range</th>
<th>Mean</th>
<th>SD</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Severity of UI</strong></td>
<td>1-6</td>
<td>1-6</td>
<td>1.93</td>
<td>1.35</td>
<td>122</td>
<td>81.9</td>
</tr>
<tr>
<td>Slight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>122</td>
<td>81.9</td>
</tr>
<tr>
<td>Moderate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>16</td>
<td>10.8</td>
</tr>
<tr>
<td>Severe</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>11</td>
<td>7.4</td>
</tr>
<tr>
<td><strong>Frequency of UI</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Once or less/month</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>89</td>
<td>59.7</td>
</tr>
<tr>
<td>Few times/month</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>44</td>
<td>29.5</td>
</tr>
<tr>
<td>Few times/week</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9</td>
<td>6.0</td>
</tr>
<tr>
<td>Every day</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7</td>
<td>4.7</td>
</tr>
<tr>
<td><strong>Amount of UI</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Only drops or a little</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>117</td>
<td>78.5</td>
</tr>
<tr>
<td>More than a little</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>32</td>
<td>21.5</td>
</tr>
<tr>
<td><strong>Incontinence-QOL Scale</strong></td>
<td>0-100</td>
<td>4.55-100</td>
<td>83.67</td>
<td>17.68</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avoidance &amp; limiting behavior</td>
<td>0-36.37</td>
<td>1.14-36.36</td>
<td>29.04</td>
<td>7.23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychosocial impacts</td>
<td>0-40.91</td>
<td>.00-40.91</td>
<td>35.96</td>
<td>7.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social embarrassment</td>
<td>0-22.73</td>
<td>3.41-22.73</td>
<td>18.67</td>
<td>4.59</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: SD = Standard deviation, No.= Number, %= Percent.*
TABLE 17. *Description of Sample on the Incontinence-QOL Scale of HSB for UI*  
* (N=149)

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I worry about not being able to get to the toilet on time</td>
<td>2.95</td>
<td>1.23</td>
<td>0-4</td>
</tr>
<tr>
<td>2</td>
<td>I worry about coughing and sneezing because of my continence</td>
<td>2.88</td>
<td>1.23</td>
<td>0-4</td>
</tr>
<tr>
<td>3</td>
<td>I have to be careful about standing up after sitting down because of my incontinence</td>
<td>3.57</td>
<td>.86</td>
<td>0-4</td>
</tr>
<tr>
<td>4</td>
<td>I worry where the toilets are in new places</td>
<td>2.94</td>
<td>1.26</td>
<td>0-4</td>
</tr>
<tr>
<td>10</td>
<td>It is important for me to make frequent trips to the toilet</td>
<td>2.96</td>
<td>1.29</td>
<td>0-4</td>
</tr>
<tr>
<td>11</td>
<td>Because of my incontinence, it is important to plan every detail in advance</td>
<td>3.34</td>
<td>1.06</td>
<td>0-4</td>
</tr>
<tr>
<td>13</td>
<td>I have a hard time getting a good night’s sleep because of my incontinence</td>
<td>3.46</td>
<td>.92</td>
<td>0-4</td>
</tr>
<tr>
<td>20</td>
<td>I have to watch what I drink because of my incontinence</td>
<td>3.46</td>
<td>.90</td>
<td>0-4</td>
</tr>
</tbody>
</table>

**Avoidance and Limiting Behavior**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>I feel depressed because of my incontinence</td>
<td>3.64</td>
<td>.76</td>
<td>0-4</td>
</tr>
<tr>
<td>6</td>
<td>Because of my incontinence, I don’t feel free to leave my home for long periods of time</td>
<td>3.13</td>
<td>1.29</td>
<td>0-4</td>
</tr>
<tr>
<td>7</td>
<td>I feel frustrated because my incontinence prevents me from doing what I want</td>
<td>3.64</td>
<td>.75</td>
<td>0-4</td>
</tr>
<tr>
<td>9</td>
<td>Incontinence is always on my mind</td>
<td>3.35</td>
<td>1.05</td>
<td>0-4</td>
</tr>
<tr>
<td>15</td>
<td>My incontinence makes me feel like I’m not a healthy person</td>
<td>3.46</td>
<td>.90</td>
<td>0-4</td>
</tr>
<tr>
<td>16</td>
<td>My incontinence makes me feel helpless</td>
<td>3.60</td>
<td>.73</td>
<td>0-4</td>
</tr>
<tr>
<td>17</td>
<td>I get less enjoyment out of life because of my incontinence</td>
<td>3.59</td>
<td>.76</td>
<td>0-4</td>
</tr>
<tr>
<td>21</td>
<td>My incontinence limits my choice of clothing</td>
<td>3.62</td>
<td>.75</td>
<td>0-4</td>
</tr>
<tr>
<td>22</td>
<td>I worry about having sex because of my incontinence</td>
<td>3.61</td>
<td>.83</td>
<td>0-4</td>
</tr>
</tbody>
</table>

**Psychosocial Impacts**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>I worry about others smelling urine on me</td>
<td>3.46</td>
<td>1.05</td>
<td>0-4</td>
</tr>
<tr>
<td>12</td>
<td>I worry about my incontinence getting worse as I grow older</td>
<td>2.65</td>
<td>1.27</td>
<td>0-4</td>
</tr>
<tr>
<td>14</td>
<td>I worry about being embarrassed or humiliated because of my incontinence</td>
<td>3.52</td>
<td>.86</td>
<td>0-4</td>
</tr>
<tr>
<td>18</td>
<td>I worry about wetting myself</td>
<td>3.40</td>
<td>.96</td>
<td>0-4</td>
</tr>
<tr>
<td>19</td>
<td>I feel like I have no control over my bladder</td>
<td>3.40</td>
<td>.91</td>
<td>0-4</td>
</tr>
</tbody>
</table>

**Social Embarrassment**

Note: SD = standard deviation.
Help-Seeking Behavior

HSB was measured by a visual analog scale with line 10 cm indicating how strongly the subjects had considered seeking professional help to treat their UI symptoms. The mean of HSB was 2.24 (SD=3.11) with a range of 0-10, indicating that respondents had not considered seeking help for UI. The results are shown in Table 18. More than half of the respondents (57.7%) marked below 1 cm and 51 (34.2%) respondents reported that they had not considered seeking help at all. Twenty five (16.8%) respondents marked the line above the midpoint (5 cm) and only 15 (10.1%) marked above 8 cm.

TABLE 18. Description of Sample on the HSB for UI (N=149)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Possible range of scores</th>
<th>Range</th>
<th>Mean</th>
<th>SD</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSB</td>
<td>0-10</td>
<td>0-10</td>
<td>2.24</td>
<td>3.11</td>
<td>86</td>
<td>57.7</td>
</tr>
<tr>
<td></td>
<td>.00-1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.01-8.00</td>
<td></td>
<td></td>
<td></td>
<td>48</td>
<td>32.2</td>
</tr>
<tr>
<td></td>
<td>8.01-10.00</td>
<td></td>
<td></td>
<td></td>
<td>15</td>
<td>10.1</td>
</tr>
</tbody>
</table>

In addition, three questions were asked of participants: the reasons why they had not considered seeking help, whether they had sought help for UI or not, and UI treatments. Fifty nine out of 149 answered the open-ended question about the reason why they had not considered seeking help for UI symptoms. The reasons are listed in Table 19. Thirty seven respondents (62.7%) thought UI was a minor problem that could be self managed or it was not regarded as a serious symptom. The second most common reason (13.6%) for not considering seeking help was that the woman was not aware that there was a need for treatment because “UI is normal in old age”. Seven (11.9%) respondents
reported they could not afford to seek help from health care professionals because of a lack of health insurance. Interestingly, four respondents (6.8%) reported they had a problem communicating with health care professionals that prevented them from seeking help. Three (5.1%) respondents stated UI may resolve spontaneously.

**TABLE 19. Description of Reasons for Not Seeking Help (n = 59)**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>UI is a minor problem</td>
<td>37</td>
<td>62.7</td>
</tr>
<tr>
<td>2</td>
<td>Unaware that there was a need for treatment because UI is normal in old age</td>
<td>8</td>
<td>13.6</td>
</tr>
<tr>
<td>3</td>
<td>A lack of health insurance</td>
<td>7</td>
<td>11.9</td>
</tr>
<tr>
<td>4</td>
<td>Language problem</td>
<td>4</td>
<td>6.8</td>
</tr>
<tr>
<td>5</td>
<td>UI may resolve spontaneously</td>
<td>3</td>
<td>5.1</td>
</tr>
</tbody>
</table>

*Note: No.= Number, %= Percent.*

The second question about whether the women had sought help for UI or not was asked of the participants. Nineteen (12.8%) out of 149 responded they had visited a health care provider to seek help for UI. Seventeen (89.5%) had visited doctors and 2 (10.5%) had visited nurse practitioners.

With regard to UI treatments, nineteen respondents reported that they tried some treatment for UI; thirteen (68.4%) had performed pelvic floor muscle exercise, three (15.8%) had used voiding frequently and changing their underwear frequently, two (10.5%) were taking cranberry tablets, and one (5.2%) was being given hormone therapy.
Analyses of Research Questions

Four research questions were addressed: 1) What are the reliabilities of the five newly translated measures and the validity of one newly developed measure?, 2) What factors affect HSB of Korean American women with UI?, 3) Does severity of UI mediate the relationship between biological risk factor composite and HSB of aging Korean American women?, and 4) Do family and community resources composite (health care support and social support) moderate the relationships between perceived need (severity of UI and Incontinence-QOL) and HSB among aging Korean American women with UI?. The results of each research question were presented.

Research Question One

What Are the Reliabilities of the Five Newly Translated Measures and the Validity of One Newly Developed Measure?

Psychometric properties were examined for the reliability and validity. Internal consistencies of the five newly translated Korean versions of measures (The Brief ARSKA-II, the Family Tradition and Authority Orientation Scale, the Incontinence Quiz Scale, the Social Support Scale, and the Incontinence-QOL Scale) were analyzed. Standardized Cronbach’s alpha coefficients were used to assess the internal consistency. Content validity of the five measures was evaluated by three Korean nursing doctoral students. Construct validity of the investigator-developed Social Support Scale was examined using a confirmatory factor analysis.

Reliability Assessment

In preparation of the study, the equivalence of the new Korean versions and the
original English versions was evaluated by comparing scores of 22 bilingual (Korean/English) women on both versions of the questionnaires. Data analysis included correlations between total scores of both versions (English and Korean) and internal consistency.

After the woman had completed both versions of the five newly translated instruments, the investigator asked her to look over both versions, and to explain whether she thought the two versions were equivalent, and whether she could understand the questions. The investigator took written notes about the participants’ answers.

Based on this procedure, minor revisions were performed. For instance, in the Incontinence Quiz Scale, ‘involuntary loss’ in the 10 items (item #1-4, 6, and 9-13) was not understandable in Korean. Thus, it was reworded to ‘uncontrolled loss’. Another example in the Incontinence Quiz Scale was ‘over-the-counter medications’ in the item #3. In Korean, there were no appropriate words or phrases for ‘over-the-counter medications’ although certain medications should be purchased only with doctor’s prescription. The term, ‘over-the-counter medications’, was often confused with drugs which can be obtained from uncertified people or some drugs that are not approved by Ministry of Heath and Welfare in Korea which is similar to the Federal Drug Administration in the U.S. Thus, additional explanation was added to prevent subjects being confused. The phrase was changed to “drugs can be purchased without the doctor’s prescription in pharmacy”.

Data analysis for this small sample included means, standard deviation, range of scores, and correlations between total scores of both versions and Cronbach’s alpha.
coefficients. Mean age of the 22 bilingual subjects was 48.86 years (SD=9.42) with a range of 36-70. Mean of the education level was 13.68 years (SD=3.08) with a range of 6-19.

Table 20 displays the total scores on the English and Korean versions of instruments for the bilingual respondents. The correlations between total scores of the English versions and Korean versions of the five instruments were high: the Brief ARSKA-II ($r=.81$), the Family Tradition and Authority Orientation Scale ($r=.84$), the Incontinence Quiz Scale ($r=.92$), the Social Support Scale ($r=.78$), and the Incontinence-QOL Scale ($r=.93$).
### TABLE 20. Total Scores on the English and Korean Versions of the Measures in Bilingual (N = 22)

<table>
<thead>
<tr>
<th>Instruments</th>
<th>Possible range of scores</th>
<th>Range</th>
<th>Mean</th>
<th>SD</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Brief ARSKA-II</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>English Version</td>
<td>12-60</td>
<td>25-58</td>
<td>37.50</td>
<td>9.65</td>
<td>$r = .81^{**}$</td>
</tr>
<tr>
<td>Korean Version</td>
<td>12-60</td>
<td>21-58</td>
<td>35.68</td>
<td>10.44</td>
<td></td>
</tr>
<tr>
<td>The Family Tradition &amp; Authority Orientation Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>English Version</td>
<td>0-3</td>
<td>0-3</td>
<td>1.68</td>
<td>1.00</td>
<td>$r = .84^{**}$</td>
</tr>
<tr>
<td>Korean Version</td>
<td>0-3</td>
<td>0-3</td>
<td>1.82</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>The Incontinence Quiz Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>English Version</td>
<td>0-14</td>
<td>1-10</td>
<td>5.23</td>
<td>2.96</td>
<td>$r = .92^{**}$</td>
</tr>
<tr>
<td>Korean Version</td>
<td>0-14</td>
<td>1-10</td>
<td>5.41</td>
<td>2.99</td>
<td></td>
</tr>
<tr>
<td>The Social Support Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>English Version</td>
<td>0-5</td>
<td>0-5</td>
<td>2.32</td>
<td>1.32</td>
<td>$r = .78^{**}$</td>
</tr>
<tr>
<td>Korean Version</td>
<td>0-5</td>
<td>0-5</td>
<td>2.32</td>
<td>1.43</td>
<td></td>
</tr>
<tr>
<td>The Incontinence-QOL Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>English Version</td>
<td>0-100</td>
<td>27.27-100</td>
<td>81.62</td>
<td>21.66</td>
<td>$r = .93^{**}$</td>
</tr>
<tr>
<td>Korean Version</td>
<td>0-100</td>
<td>27.27-100</td>
<td>79.26</td>
<td>20.72</td>
<td></td>
</tr>
</tbody>
</table>

*Note. SD = Standard deviation, $r = $ Pearson correlation coefficient, * $p<.05$, ** $p<.01$.*

The target language version can be treated like a new instrument, thus, an alpha of .70 (Nunnally, 1978) was considered to be adequate in this study. Table 21 presents Cronbach’s alphas of the five newly translated instruments. The internal consistencies of the four instruments were adequate. While the reliability of the Social Support Scale was lower than .70 for English version ($\alpha=.60$), that of the Korean version reached the criterion ($\alpha=.70$). However, the internal consistency of the Family Tradition and
Authority Orientation Scale was low for both the English ($\alpha=.48$) and Korean versions ($\alpha=.45$).


<table>
<thead>
<tr>
<th>Instruments</th>
<th>Cronbach’s alphas</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Brief ARSKA-II</td>
<td></td>
</tr>
<tr>
<td>English Version</td>
<td>.87</td>
</tr>
<tr>
<td>Korean Version</td>
<td>.88</td>
</tr>
<tr>
<td>The Family Tradition and Authority Orientation Scale</td>
<td></td>
</tr>
<tr>
<td>English Version</td>
<td>.48</td>
</tr>
<tr>
<td>Korean Version</td>
<td>.45</td>
</tr>
<tr>
<td>The Incontinence Quiz Scale</td>
<td></td>
</tr>
<tr>
<td>English Version</td>
<td>.80</td>
</tr>
<tr>
<td>Korean Version</td>
<td>.79</td>
</tr>
<tr>
<td>The Social Support Scale</td>
<td></td>
</tr>
<tr>
<td>English Version</td>
<td>.60</td>
</tr>
<tr>
<td>Korean Version</td>
<td>.70</td>
</tr>
<tr>
<td>The Incontinence-QOL Scale</td>
<td></td>
</tr>
<tr>
<td>English Version</td>
<td>.97</td>
</tr>
<tr>
<td>Korean Version</td>
<td>.97</td>
</tr>
</tbody>
</table>

*Note. SD= Standard deviation.*

Table 22 displays Cronbach’s alpha coefficients and item-total correlations of Korean versions of the five instruments in the total sample (N=149). Internal consistencies of the four instruments were considered good enough to be used: the Brief ARSKA-II ($\alpha=.88$), the Incontinence Quiz Scale ($\alpha=.77$), the Incontinence-QOL Scale ($\alpha=.96$), and the Social Support Scale ($\alpha=.64$). Internal consistencies of three subscales of
the Incontinence-QOL Scale were high as well. However, the reliability of the Family Tradition and Authority Orientation Scale ($\alpha=.57$) was lower than criterion (.70).

Item-total correlations were used to examine whether any items did not relate well enough to be retained with the corresponding corrected scale total. A minimum total criterion item-total correlation level of .30 was set for inclusion in the scale (Nunnally, 1994). The item-total correlations ranges of the four instruments except for the Incontinence Quiz Scale were acceptable. Three items of the Incontinence Quiz Scale failed to meet the criterion: the item #1 ($r=.12$), ‘involuntary loss of urine, often called leaky bladder or urinary incontinence, is one of the results of normal aging”, the item #6 ($r=.21$), ‘most people who currently have involuntary urine loss live normal lives’, and the item #8 ($r=.26$), ‘women are more likely than men to develop urinary incontinence’.

Low item-total correlations of the scale could be caused by irrelevance of the items to the concept to be measured. Although the results of the item analysis of the scale suggested a possibility of bias in certain items that may influence the sensitivity of both English and Korean versions, they provide a possible explanation for the relevance of the items. Thus, alpha coefficients of the scale after deleting each item were calculated. However, the alpha coefficients were not improved by removing these items. Consequently, the three items were used.
TABLE 22. *Reliability for the Korean Versions of the Measures Among Aging Korean American Women with UI (N =149)*

<table>
<thead>
<tr>
<th>Instruments</th>
<th>Cronbach’s alphas</th>
<th>Item-total correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Brief ARSKA-II</td>
<td>.88</td>
<td>.45-.68</td>
</tr>
<tr>
<td>The Family Tradition and Authority Orientation Scale</td>
<td>.57</td>
<td>.31-.43</td>
</tr>
<tr>
<td>The Incontinence Quiz Scale</td>
<td>.77</td>
<td>.12-.54</td>
</tr>
<tr>
<td>The Social Support Scale</td>
<td>.64</td>
<td>.31-.45</td>
</tr>
<tr>
<td>The Incontinence-QOL Scale</td>
<td>.96</td>
<td>.52-.82</td>
</tr>
<tr>
<td>Avoidance &amp; limiting behavior subscale</td>
<td>.87</td>
<td>.53-.71</td>
</tr>
<tr>
<td>Psychosocial impacts subscale</td>
<td>.93</td>
<td>.52-.84</td>
</tr>
<tr>
<td>Social embarrassment subscale</td>
<td>.86</td>
<td>.55-.77</td>
</tr>
</tbody>
</table>

*Validity Assessment*

Content validity is based on the extent to which a measurement reflects the specific intended domain of content (Carmines & Zeller, 1991). Content validity of the five measures was established by three Korean nursing doctoral students. Validities of the four scales had been established in previous studies. A confirmatory factor analysis was performed to test construct validity of the Social Support Scale which was newly developed by the investigator. Principal axis factoring with one factor forced method was used. Table 23 displays the result of factor analysis. Variables were loaded from .31 to .75 with 20.4% of explained variance.
TABLE 23. A Confirmatory Factor Analysis of the Social Support Scale with a Principal Axis Factoring Method with One Factor Forced (N = 149)

<table>
<thead>
<tr>
<th>Items</th>
<th>Trial 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Had family members suggested seeking health professional help because of your urinary symptoms?</td>
<td>.74</td>
</tr>
<tr>
<td>2 Had friends suggested seeking health professional help because of your urinary symptoms?</td>
<td>.75</td>
</tr>
<tr>
<td>3 Are there any family members with whom you feel comfortable discussing urinary incontinence?</td>
<td>.34</td>
</tr>
<tr>
<td>4 Are there any friends with whom you feel comfortable discussing urinary incontinence?</td>
<td>.31</td>
</tr>
<tr>
<td>5 Have you ever been given information to help decide about seeking help for urinary incontinence?</td>
<td>.36</td>
</tr>
</tbody>
</table>

The findings from research question one indicated that the equivalence of the English and Korean language versions of the four newly translated measures was fairly well supported by the data. However, the internal consistency of the Family Tradition and Authority Orientation Scale was low. Construct validity of the Social Support Scale was established from a factor analysis. Based on psychometric properties, the four newly translated and one developed measure were appropriate instruments for Korean women with UI.
Research Question Two

What Factors Affect HSB of Korean American Women with UI?

Multiple regression is a data analysis strategy used to explain or predict an outcome variable with a set of independent variables. Hierarchical multiple regression analyses were performed by entering each group of variables by model stage into the regression equation in six consecutive blocks (biological risk factor composite was in the first block; culture composite was in the second block; health beliefs was in the third block; social structure was in the fourth block; family and community resources composite was in the fifth block; and perceived need was in the sixth block). Results were considered statistically significant when $p$ values were less than or equal to .05.

Table 24 displays a summary of the hierarchical regression model for variables predicting HSB among aging Korean American women with UI. In step 1, biological risk factor composite accounted 0.3% of the variance in HSB ($F (1, 147) = .509, p = .477$). Biological risk factor composite was not significant in predicting HSB ($\beta = .059, p = .477$).

In step 2, when the culture composite variable was added into the model holding biological risk factor composite constant, it did not explain variance. The total explained variance was 0.4% ($F (2, 146) = .256, p = .775$). Culture composite was not significant in predicting HSB ($\beta = .006, p = .940$).

In step 3, when the health belief variable was added into the model, controlling for the biological risk factor composite and the culture composite, it explained an additional 1.5% of the variance (Total $R^2 = .018$) ($F (3, 145) = .901, p = .442$). The
increment to $R^2 (\Delta R^2)$ as the health beliefs factor was stepped into the equation was .015. Health belief variable was not significant in predicting HSB ($\beta = .125$, $p = .141$).

In step 4, taken together and controlling for the biological risk factor composite, the culture composite, and health beliefs, when the social structural variables were added to the model, the increment to $R^2 (\Delta R^2)$ was .002 (Total explained variance=2.0%, $F (5, 143) = .583, p = .713$). Both of the variables were not significant predictors of HSB: education ($\beta = -.033$, $p = .715$) and employment status ($\beta = -.029$, $p = .761$).

In step 5, when a set of family and community resources was added, controlling for all predisposing factors, total explained variance was 16.5%, $F (8, 140) = 3.457, p < .01$). The increment to $R^2 (\Delta R^2)$ was .145. When all other variables were held constant, only social support was a significant predictor of HSB ($\beta = .372, p < .001$).

In step 6, when perceived need variables were added to the model, the increment to $R^2 (\Delta R^2)$ was .193 (Total explained variance=35.8%, $F (10, 138) = 7.687, p < .001$). Severity of UI and Incontinence-QOL were significant predictors of HSB ($\beta = .262, p < .01$) and ($\beta = -.264, p < .01$), respectively.

Findings for research question two showed that taken together and controlling for other variables, severity of UI, Incontinence-QOL, and social support were significant predictors of HSB. They accounted for 35.8% of the variance in HSB.
TABLE 24. Summary of Hierarchical Regression Analyses for Variables Predicting the HSB Among Aging Korean American Women with UI (N=149)

<table>
<thead>
<tr>
<th>Predictors</th>
<th>β</th>
<th>p value</th>
<th>$R^2$</th>
<th>$\Delta R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Predisposing factors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 1: Biological risk factor composite</td>
<td>.059</td>
<td>.477</td>
<td>.003</td>
<td>.003</td>
</tr>
<tr>
<td>Model 2: Culture composite</td>
<td>.006</td>
<td>.940</td>
<td>.004</td>
<td>.000</td>
</tr>
<tr>
<td>Model 3: Health belief</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge and Attitudes about UI</td>
<td>.125</td>
<td>.141</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Model 4: Social structure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>-.033</td>
<td>.715</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employment</td>
<td>-.029</td>
<td>.761</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Enabling factors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 5: Family and community resources composite</td>
<td>.165</td>
<td>.145</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health care support composite</td>
<td>.048</td>
<td>.585</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social support</td>
<td>.372</td>
<td>&lt;.001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation</td>
<td>.010</td>
<td>.907</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Need factors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 6: Perceived need</td>
<td>.358</td>
<td>.193</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severity of UI</td>
<td>.262</td>
<td>&lt;.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incontinence-QOL</td>
<td>-.264</td>
<td>&lt;.01</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* $\beta =$ The standardized regression coefficients, $p$ value = Pearson correlation coefficient, $R^2$ = Total explained variance $\Delta R^2 =$ increment to $R^2$. 
Research Question Three

Does Severity of UI Mediate the Relationship Between Biological Risk Factor Composite and HSB of Aging Korean American Women with UI?

In general, a given variable may be said to function as a mediator to the extent that it accounts for the relation between the predictor and the criterion (Baron & Kenny, 1986). Multiple regression was used to test severity of UI as a mediator of the relationship between the biological risk factor composite and HSB among aging Korean American women with UI. The results of the analyses are shown in Table 25. Three regression equations were tested: 1) regressing severity of UI on the biological risk factor composite, 2) regressing HSB on the biological risk factor composite, and 3) regressing HSB on both the biological risk factor composite and severity of UI. Separate coefficients for each equation should be estimated and tested.

The first regression analysis showed that the biological risk factor composite was not significantly related to severity of UI, accounting for 0% of variance in severity of UI, $F (1, 147) = 0.014, p = 0.906$. The second regression analysis demonstrated that the biological risk factor composite was not significantly associated with HSB, accounting for 0.3% of variance in HSB, $F (1, 147) = 0.059, p = 0.477$. The third regression analysis indicated that severity of UI ($\beta = 0.429, p < .001$) was independently associated with HSB, accounting for 18.8% of variance in HSB, $F (2, 146) = 16.863, p < .001$. The findings of the research question three concluded that there is no mediator effect of severity of UI between the biological risk factor composite and HSB.
The mediator effect should be found only if there is a significant relationship between the independent variable and mediator. There must be a relationship between independent variable and dependent variables as well (Baron & Kenny, 1986). There was no relationship between biological risk factor composite and severity of UI and biological risk factor composite and HSB therefore, no mediator effect of severity of UI between biological risk factor composite and HSB was found.

TABLE 25. Summary of Regression Analyses for Testing the Mediator of the Relationships Between Biological Risk Factor Composite and HSB (N=149)

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Criterion</th>
<th>β</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression 1</td>
<td>Severity of UI</td>
<td>-.010</td>
<td>.906</td>
</tr>
<tr>
<td></td>
<td>Biological risk factor composite</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regression 2</td>
<td>HSB</td>
<td>.059</td>
<td>.477</td>
</tr>
<tr>
<td></td>
<td>Biological risk factor composite</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regression 3</td>
<td>HSB</td>
<td>.063</td>
<td>.844</td>
</tr>
<tr>
<td></td>
<td>Biological risk factor composite</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Severity of UI</td>
<td>.429</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

*Note. β = The standardized regression coefficients, p value= Pearson correlation coefficient.*
Research Question Four

Do Family and Community Resources Composite Moderate the Relationships Between Perceived Need and HSB among Aging Korean American Women with UI?

The family and community resources composite were measured by health care support and social support. Perceived need focused on perceived the severity of UI and Incontinence-QOL. The moderator or interaction effects between perceived need and family and community resources composite were examined. Family and community resources composite were added as moderators to examine moderate effects with perceived need in predicting HSB. A moderator effect was defined as an interaction between a focal independent variable (perceived need) and a factor (family and community resources composite) that specifies appropriate conditions (HSB) for its operation.

Moderation is usually tested with analysis of variance (ANOVA) or regression analysis, in which the dependent variable $Y$ is regressed on the independent variable $X$, the moderator variable $Z$, and their product $XZ$, as follows: $Y = b_{01} + b_{x1}X + b_{z1}Z + b_{xz1}XZ + e_Y$. In the equation, the test of the coefficient on $XZ$ (i.e., $b_{xz1}$) is used to infer moderation (Aiken & West, 1991). Multiple regression was used to examine the moderator effects of enabling factors between need and HSB among aging Korean American women with UI. HSB was regressed on perceived need variables, family and community resources composite variables, and the interaction of family community resources composite and perceived need. In the first step of the regression, the independent variables (including the moderator) were entered into the model as
predictors of the outcome variable. In a separate step, an interaction term (the product of two independent variables, which represents the moderator effect) was entered.

Table 26 presents unstandardized regression coefficients ($B$), standard error estimates ($SEB$), standardized regression coefficients ($\beta$), and $p$ value of the moderator effects of health care support composite on severity of UI in predicting HSB. Results show there were main effects of health care support composite ($\beta=.154, p<.05$) and the severity of UI ($\beta=.434, p <.001$) in predicting HSB, accounting for 20.7% of variance in HSB, $F (2, 146) =19.093, p <.001$. There was a significant interaction effect of health care support composite on severity of UI in predicting HSB ($\beta=.312, p =.066$), accounting for 22.6% of variance in HSB, $F (3, 145) =14.107, p <.001$.

Table 27 displays a summary of the moderator effects of health care support composite on Incontinence-QOL in predicting HSB. Results show there was no main effect of health care support composite ($\beta=.080, p=.282$) and there was a main effect of Incontinence-QOL ($\beta=-.446, p <.001$) in predicting HSB, accounting for 21.5% of variance in HSB, $F (2, 146) =19.935, p <.001$. There was a significant interaction effect of health care support composite and Incontinence-QOL in predicting HSB ($\beta=-.844, p =.128$), accounting for 22.7% of variance in HSB, $F (3, 145) =14.195, p <.001$.

Consequently, health care support composite (health insurance and a regular source of health care) facilitates HSB among Korean American women who have severe incontinence symptoms. In addition, health care support composite facilitates HSB among women who have low UI specific QOL.
### TABLE 26. Summary of Moderator Effects of Health Care Support Composite on Severity of UI in Predicting HSB (N = 149)

<table>
<thead>
<tr>
<th>Predictors</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severity of UI</td>
<td>.999</td>
<td>.170</td>
<td>.434</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Health care support composite</td>
<td>.793</td>
<td>.380</td>
<td>.154</td>
<td>&lt;.05</td>
</tr>
<tr>
<td><strong>Model 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severity of UI</td>
<td>.507</td>
<td>.313</td>
<td>.220</td>
<td>.107</td>
</tr>
<tr>
<td>Health care support composite</td>
<td>-.181</td>
<td>.643</td>
<td>-.035</td>
<td>.779</td>
</tr>
<tr>
<td>Severity of UI * Health care support composite</td>
<td>.498</td>
<td>.267</td>
<td>.312</td>
<td>.066</td>
</tr>
</tbody>
</table>

*Note. B = unstandardized regression coefficients, SEB = standard error estimates, β = The standardized regression coefficients, p value = Pearson correlation coefficient.*

### TABLE 27. Summary of Moderator Effects of Health Care Support Composite on Incontinence-QOL in Predicting HSB (N = 149)

<table>
<thead>
<tr>
<th>Predictors</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incontinence-QOL</td>
<td>-.089</td>
<td>.015</td>
<td>-.446</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Health care support composite</td>
<td>.411</td>
<td>.381</td>
<td>.080</td>
<td>.282</td>
</tr>
<tr>
<td><strong>Model 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incontinence-QOL</td>
<td>-.037</td>
<td>.037</td>
<td>-.185</td>
<td>.319</td>
</tr>
<tr>
<td>Health care support composite</td>
<td>4.85</td>
<td>2.816</td>
<td>.909</td>
<td>.098</td>
</tr>
<tr>
<td>Incontinence-QOL * Health care support composite</td>
<td>-.044</td>
<td>.029</td>
<td>-.844</td>
<td>.128</td>
</tr>
</tbody>
</table>

*Note. B = unstandardized regression coefficients, SEB = standard error estimates, β = The standardized regression coefficients, p value = Pearson correlation coefficient.*

Table 28 shows unstandardized regression coefficients (B), standard error estimates (SEB), standardized regression coefficients (β), and p value of the moderator.
effects of social support on severity of UI in predicting HSB. Results show that there were main effects of social support ($\beta=.322, p < .001$) and the severity of UI ($\beta=.387, p < .001$) in predicting HSB, accounting for 28.6% of variance in HSB, $F(2, 146) = 29.189, p < .001$. There was a significant moderator effect of social support on severity of UI in predicting HSB ($\beta=.287, p = .075$), accounting for 30.1% of variance in HSB, $F(3, 145) = 20.827, p < .001$.

Table 29 presents the summary of the moderator effects of social support on Incontinence-QOL in predicting HSB. Results show that there was main effects of social support ($\beta=.266, p < .001$) and Incontinence-QOL ($\beta=-.383, p < .001$) in predicting HSB, accounting for 27.4% of variance in HSB, $F(2, 146) = 27.507, p < .001$. There was a significant interaction effect of social support on Incontinence-QOL in predicting HSB ($\beta=-.735, p < .05$), accounting for 29.6% of variance in HSB, $F(3, 145) = 20.363, p < .001$.

Consequently, social support from friends, family and available information facilitates HSB among Korean American women who have severe incontinence symptoms. Also, social support facilitates HSB among women who have low UI specific QOL.
TABLE 28. Summary of Moderator Effects of Social Support on Severity of UI in Predicting HSB (N = 149)

<table>
<thead>
<tr>
<th>Predictors</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severity of UI</td>
<td>.890</td>
<td>.162</td>
<td>.387</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Social support</td>
<td>.771</td>
<td>.169</td>
<td>.322</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Model 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severity of UI</td>
<td>.480</td>
<td>.280</td>
<td>.209</td>
<td>.088</td>
</tr>
<tr>
<td>Social support</td>
<td>.373</td>
<td>.278</td>
<td>.156</td>
<td>.182</td>
</tr>
<tr>
<td>Severity of UI * Social support</td>
<td>.172</td>
<td>.96</td>
<td>.287</td>
<td>.075</td>
</tr>
</tbody>
</table>


TABLE 29. Summary of Moderator Effects of Social Support on Incontinence-QOL in Predicting HSB (N= 149)

<table>
<thead>
<tr>
<th>Predictors</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incontinence-QOL</td>
<td>-.076</td>
<td>.015</td>
<td>-.383</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Social support</td>
<td>.638</td>
<td>.176</td>
<td>.266</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Model 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incontinence-QOL</td>
<td>-.025</td>
<td>.028</td>
<td>-.126</td>
<td>.368</td>
</tr>
<tr>
<td>Social support</td>
<td>2.426</td>
<td>.844</td>
<td>1.013</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>Incontinence-QOL * Social support</td>
<td>-.020</td>
<td>.009</td>
<td>-.735</td>
<td>&lt;.05</td>
</tr>
</tbody>
</table>


Table 30 presents unstandardized regression coefficients (*B*), standard error estimates (*SEB*), standardized regression coefficients (*β*), and *p* value of the moderator.
effect of transportation on severity of UI in predicting HSB. Results show that there was no main effect of transportation ($\beta=-.023$, $p=.763$) and there was a direct effect of the severity of UI ($\beta=.430$, $p<.001$) in predicting HSB, accounting for 18.4% of variance in HSB, $F(2, 146) =16.483$, $p<.001$. There was no significant interaction effect of transportation on severity of UI in predicting HSB ($\beta=.005$, $p=.973$), accounting for 18.4% of variance in HSB, $F(3, 145) =10.914$, $p<.001$.

Table 31 displays the summary of the moderator effects of transportation on Incontinence-QOL in predicting HSB. Results show that there was no main effect of transportation ($\beta=-.106$, $p=.160$) and there was a main effect of Incontinence-QOL ($\beta=-.480$, $p<.001$) in predicting HSB, accounting for 21.9% of variance in HSB, $F(2, 146) =20.460$, $p<.001$. There was no significant interaction effect of transportation on Incontinence-QOL in predicting HSB ($\beta=.107$, $p=.770$), accounting for 21.9% of variance in HSB, $F(3, 145) =13.583$, $p<.001$.

Consequently, transportation was not a moderator to facilitate or impede HSB among Korean American women who have severe incontinence symptoms or low UI specific QOL.
TABLE 30. Summary of Moderator Effects of Transportation on Incontinence-QOL in Predicting HSB (N = 149)

<table>
<thead>
<tr>
<th>Predictors</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severity of UI</td>
<td>.989</td>
<td>.172</td>
<td>.430</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Transportation</td>
<td>-.210</td>
<td>.695</td>
<td>-.023</td>
<td>.763</td>
</tr>
<tr>
<td>Model 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severity of UI</td>
<td>.987</td>
<td>.186</td>
<td>.429</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Transportation</td>
<td>-.244</td>
<td>1.247</td>
<td>-.026</td>
<td>.845</td>
</tr>
<tr>
<td>Severity of UI * Transportation</td>
<td>.017</td>
<td>.498</td>
<td>.005</td>
<td>.973</td>
</tr>
</tbody>
</table>


TABLE 31. Summary of Moderator Effects of Transportation on Incontinence-QOL in Predicting HSB (N = 149)

<table>
<thead>
<tr>
<th>Predictors</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incontinence-QOL</td>
<td>-.096</td>
<td>.015</td>
<td>-.480</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Transportation</td>
<td>-.984</td>
<td>.696</td>
<td>-.106</td>
<td>.160</td>
</tr>
<tr>
<td>Model 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incontinence-QOL</td>
<td>-.098</td>
<td>.017</td>
<td>-.490</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Transportation</td>
<td>-1.978</td>
<td>3.463</td>
<td>-.213</td>
<td>.569</td>
</tr>
<tr>
<td>Incontinence-QOL * Transportation</td>
<td>.011</td>
<td>.038</td>
<td>.107</td>
<td>.770</td>
</tr>
</tbody>
</table>

Final Model Testing

The model was revised and tested with multiple linear regressions using a hierarchical method based upon results of model testing. The final model is presented in Figure 7. Enabling (family and community resources composite) and need factors (perceived need) of HSB among women with UI were tested. Table 32 displays standardized regression coefficients ($\beta$), $p$ value of the predictors, and $R^2$ on HSB among aging Korean American women with UI. In step 1, a set of family and community resources (health care support composite and social support) accounted for about 14.4% of the variance in HSB $F (2, 146)=12.25, p <.001$. Only social support was a significant predictor of HSB ($\beta = .359, p <.001$).

In step 2, taken together and controlling for family and community resources composite, severity of UI and Incontinence-QOL were significant in predicting HSB. Perceived need (severity of UI and Incontinence-QOL) explained additional 18.6% of the variance. Total $R^2$ was about 32.9% the variance in HSB explained by the model $F (4, 144) =17.679, p <.001$. Severity of UI and Incontinence-QOL were significant predictors of HSB ($\beta = .276, p <.01$) and ($\beta = -.229, p <.05$), respectively. Findings for testing the final conceptual framework showed that severity of UI, Incontinence-QOL, and social support were significant predictors of HSB and they explained 32.9% of the variance.
FIGURE 7. Final Conceptual Framework of Help-Seeking Behavior Among Aging Korean American Women with Urinary Incontinence

Need Factors
- Perceived Need
  - Severity of UI +
  - I-QOL -

Help-Seeking Behaviors

Enabling Factors
- Family & community resources composite
  - Health care support composite
  - Social support

+
TABLE 32. Summary of Hierarchical Regression Analyses for Variables Predicting the HSB Among Aging Korean American Women with UI (N=149)

<table>
<thead>
<tr>
<th>Predictors</th>
<th>β</th>
<th>p value</th>
<th>$R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1: Family and community resources composite</td>
<td></td>
<td></td>
<td>14.4</td>
</tr>
<tr>
<td>Health care support composite</td>
<td>.073</td>
<td>.352</td>
<td></td>
</tr>
<tr>
<td>Social support</td>
<td>.359</td>
<td>&lt;.001</td>
<td></td>
</tr>
<tr>
<td>Model 2: Perceived need</td>
<td></td>
<td></td>
<td>32.9</td>
</tr>
<tr>
<td>Severity of UI</td>
<td>.276</td>
<td>&lt;.01</td>
<td></td>
</tr>
<tr>
<td>Incontinence-QOL</td>
<td>-.229</td>
<td>&lt;.05</td>
<td></td>
</tr>
</tbody>
</table>

Note. β = The standardized regression coefficients, p value = Pearson correlation coefficient, $R^2$ = Total explained variance.

Summary

This study examined predictors of HSB among 149 aging Korean American women with UI. This chapter described the results of the analyses including constructing composite variables, management of missing data, checking assumptions of the multiple regression and descriptive statistics. Findings of research question one showed that the reliability and validity of the four newly translated measures were appropriate to measure HSB among Korean target population. However, refinement of the Family Tradition and Authority Orientation Scale should be considered. In addition, reliable and validated instruments to measure adherence of family tradition and authority among women with UI should be utilized.

Findings of research question two showed that 35.8% of variance in HSB was explained by the conceptual framework and significant predictors of HSB were severity
of UI, Incontinence-QOL and social support. Findings of research question three concluded that there was no mediator effect of severity of UI between the biological risk factor and HSB. Findings of research question four showed that there were moderator effects of the health care support composite and social support with both the severity of UI and Incontinence-QOL in predicting HSB. The final model was tested and it explained 32.9% of the total variance on HSB among Korean American women with UI.
CHAPTER FIVE: DISCUSSION

This study was the first to describe HSB among aging Korean American women with UI. The purposes of the study were to test the psychometric properties of newly translated measures for UI and to test the conceptual framework, the Behavioral Model for Vulnerable Populations, derived from Social Ecological Theory for Health Promotion (Gelberg, Andersen, & Leake, 2000).

This chapter discusses the findings from the study and is organized in order of a description of predictors and dependent variables, and research questions. The limitations and implications of the study are presented. Finally, recommendations for future research are introduced.

Discussion of Predictors and Dependent Variables

The sample findings of predisposing predictors (biological risk factors, culture, health beliefs, and social structure), enabling predictors (family and community resources), and need predictors (perceived need) will be discussed.

Biological Risk Factors

In the conceptual framework, biological risk factors are predisposing factors or antecedents to HSB. Biological risk factors were measured by age, the number of child births, menopause status, and hysterectomy. The mean age of the subjects was 51.2 (SD=10.8) from a wide range from 32 to 87. Almost half of the subjects (45%) were younger than 50 years old. The mean number of child births was 2.1 (SD=1.2). Twelve percent of the women had never given birth and only 10.7% of the women had given four
or more births. Almost half of the women (42.3%) were premenopausal. Thirteen percent of the women had undergone a hysterectomy. Overall, the sample of this study was not at high risk of having severe UI.

Culture

In the conceptual framework, culture is a predisposing factor or antecedent to HSB. In this study, culture was measured by low acculturation, family tradition and authority, and the preference for a female health care provider.

Low Acculturation

Acculturation was measured by the Brief ARSKA-II. The mean of the scale showed that the sample was ‘Korean oriented to an approximately balanced bicultural’. In addition, 51% of the respondents were very Korean oriented. They tended to speak and think in Korean. The effects of immigration on general health including UI health and the potential for health disparities among immigrant groups should be considered in this population.

Family Tradition and Authority Orientation

The degree of adherence to family tradition and authority orientation was middle in this sample. One hundred eight (72.5%) and 88 (59.1%) responded “agree” to the first and third question while 63 (42.3%) answered “agree” to the second question (my family usually waits until the head of the house is present before we have dinner). This did not mean they did not adhere to family tradition. As society has become modernized, families have tended not to eat together. Consequently, there is no need to wait for other family members to come to the table. Although this item is still valuable to measure, it needs to
be modified for the Asian family. For example, ‘when we eat together, other family members should wait until the head of the house or the senior has started to eat’.

Preference for a Female Health Care Provider

Korean American women in this sample preferred seeing a female health care provider. This was consistent with previous studies among ethnic minority women with UI (Wilkinson, 2001; Chaliha & Stanton, 1999). At the health policy level, female gynecologists, or urologists, and/or nurse practitioners are needed to overcome the difficulties experienced with embarrassment and shame. Satisfying health care preferences attributed to acculturation may promote a sense of safety and comfort with sensitive topics.

Health Beliefs

In the conceptual framework, health belief was a predisposing factor that was antecedent to the onset of UI episodes. In this study, health belief was measured by knowledge and attitudes about UI.

Knowledge and Attitudes About UI

The sample in this study was less knowledgeable and had more negative attitudes toward UI compared to the study of Kubik and colleagues (2004). While the mean of the Incontinence Quiz Scale in this study was 4.97 (SD=2.69) out of 14, Kubik and colleagues (2004) reported a mean of 5.46 (SD=2.66) in minority women and a mean of 6.16 (SD=2.86) in whites.

The number of correct responses to the items on the Incontinence Quiz Scale in this sample was lower than other studies in the general population (Branch et al., 1994;
Keller et al., 1999). The correct responses for four out of six true statements were lower than previous studies in the general population. For example, while most subjects (57.7%) in this study believed that “most people who currently have involuntary urine loss live normal lives”, 69.92% of the respondents in the Branch and colleagues’ study (1994) and 80.7% of the respondents in the Keller and colleagues’ study (1999) had correct responses.

For two statements, subjects had more correct responses compared to others. These were: “there are exercises that can help control urine if one leaks when they cough, sneeze, or laugh” and “women are more likely than men to develop urinary incontinence”. Therefore, these Korean American women were more aware of the item about higher prevalence of UI in women than in men and the effectiveness of the pelvic floor muscle exercise compared to the general population. The finding is consistent with the biological view of UI in Korea. As discussed in chapter 1, the notion of UI in Korea has been constructed based upon a biological view and the biological view of UI has been the foundation of most investigations of UI such as prevalence, risk factors and treatments for UI.

Compared to the general population, many fewer subjects had correct responses to all of the eight false statements. For instance, whereas 11.4% of the respondents answered correctly for the item “most physicians ask their older patients whether they have bladder control problems”, 36.9% of non-minority women in the Keller and colleagues’ study (1999) and 31.67% of non-minority women in the Branch and colleagues’ study (1994) had correct responses. Another example was “most people will
involuntarily or accidentally lose control of their urine on a regular basis by the time they are 85”. While only 12.8% of the sample in this study answered correctly, correct answers among non-minority women were 46.4% for Keller and colleagues’ study (1999) and 30.37% for Branch and colleagues’ study (1994).

Social Structure

In the conceptual framework, social structure is one of the predisposing factors. It was measured by education and employment status.

Education

The educational level of the sample (Mean=12.7, SD=3.75) was lower than that of all Koreans who are born outside the U.S and are 25 years of age and over. While 71.9% of the subjects had less than a bachelor’s degree, the corresponding figure for all Koreans is 45.3%. Whereas 28.1% of the respondents had graduated with at least a bachelor’s degree, the corresponding figure for all Koreans is 54.7% (The U.S Census Bureau, 2000). The lower education level of the sample was probably related to the gender of the sample. Korean women are less likely to be educated than men. Separate statistics for Korean women were not available.

Employment

Forty percent of the sample was employed and no data were available to compare the employment status of the sample with either all Koreans or Korean women in the U.S. Consideration should be given to Korean American women who are employed without health insurance or are self-employed and the kinds of occupations. Full time employment does not guarantee either having health insurance or access to health care
(Ku & Mintani, 2001). Many employment opportunities for immigrants are in the business sector which has the lowest rate of employer-sponsored health insurance (Gabel, Ginsburg, & Hunt, 1997). Although 40.9% of the respondents were employed, 27.9% of the employed women did not have health insurance. However, more than half of the employed women (52.5%) purchased private insurance.

Although the number of women who were self-employed in this study was not explored, according to the U.S Bureau (2000), Koreans (19.91%) are more likely to be self-employed compared to other Asians such as Taiwanese (13.65%) or Japanese (10.65%). Most Korean Americans work in small or self-owned businesses, so they must either pay directly for health services or purchase an individual or family policy (Ryu, Young, & Park, 2001).

The occupation of subjects should be taken into account in UI research. Women employed in occupations that limit their time to void are at risk of developing UI. Examples include women working in production lines, nurses, and teachers. Specific kinds of occupations were not explored for all subjects in the sample. Some subjects said that they worked as waitresses and reported that they did not have time to go to the bathroom when the restaurant was busy. HSB among Korean American women with UI may not be explained only by employment status. For future studies, health insurance coverage, self-employment and types of occupations should be considered.

Family and Community Resources Composite

In the conceptual framework, family and community resources were enabling factors that facilitated or impeded an individual’s use of services. It was measured by
health insurance, a regular source of health care, social support, and transportation.

Enabling resources acted as moderators to need predictors.

Health Insurance

The percentage of subjects who had some kind of health insurance in this sample (73.2%) was higher than all Koreans (45%) in the U.S (Hughes, 2002). This may be explained by the sample characteristics. Although the exact number of women who married military servicemen was not investigated, from informal conversation it appeared that many women had husbands who were currently or formally in the US Air Force. This may be why a relatively high percentage of women had health insurance. The other possible explanation was respondents’ low socio-economical status. Twenty one percent of the women who had health insurance depended on public assistance programs such as SSI or AHCCCS.

A Regular Source of Health Care

Sixty three percent of the respondents reported they had a regular source of health care. This finding was similar to all Asian Americans but was higher than all Koreans in the U.S. The Commonwealth Fund’s 2001 Health Care Quality Survey (Hughes, 2002) revealed that only 68% of Asian Americans reported having a regular doctor, but the rates were lower among Koreans (46%). The relatively high percentage of women having a regular source of care could be explained by the fact that 73.2% of the respondents were insured. Sixty three percent of the women who had health insurance reported that they visited a health care provider on a regular basis for breast or cervical cancer screening.
Social Support

Subjects in this sample reported receiving a relatively low level of social support about UI from family, friends, and available information (Mean=2.07, SD=1.30) with a range of 0-5. While the percentage of women who discussed UI with either friends (75.8%) or family members (67.8%) was high; however friends (10.1%) or family (12.1%) recommended they seek professional help. In addition, less than half of the respondents (40.9%) had been given health education information to help them decide about seeking help for UI.

Korean women tended to speak to friends (75.8%) or family members (67.8%) about their problems rather than seeking professional help. They were more open about talking about UI symptoms than has been found in the general population and among other ethnic minority groups. The National Association for Continence (2002) reported that African American women were less likely (26%) to speak to a friend or a relative about their problems than the general population (40%).

The difference could be explained by familism and strong ties with other women with UI. As discussed in chapter 1, management of UI in elders is viewed as a collective responsibility in Korean families. The primary caregiver is usually a daughter or daughter-in-law regardless of the gender of the elder. Thus, UI may be a somewhat more comfortable problem to discuss with their primary caregivers. Korean women tend to think UI is linked to sexual function. Therefore, most women do not want to talk about urinary symptoms with their husbands (Shin & Lee, 2000).
On the other hand, affected women may acknowledge that the aging women have a problem with UI which permits them to talk about it. However, the purpose of the chatting may be about sharing their experiences. It does not appear to encourage help seeking for UI or exchanging health care information. It may strengthen their misconceptions about the normalcy of UI and promote utilization of invalidated regimens such as pomegranate tablets and juice.

*Transportation*

Most women (87.2%) had conveniently available transportation. It may be that the women who had cars tended to volunteer for the study compared to those more confined and less acculturated women.

*Perceived Need*

In the conceptual framework, perceived need was an immediate reason for Korean American women with UI to seek help. In this study, need predictors included perceived severity of UI and Incontinence-QOL.

*Severity of UI*

Most respondents experienced slight symptoms of UI. Compared to previous studies in the general population, the severity of UI in this sample was slight (Roe et al., 2001; Hannestad et al., 2002; Hägglund et al., 2003; Sandvik, 1993; Patrick et al., 1998; Wagner et al., 1996). For example, Sandvik and colleagues (1993) found that nearly half of the cases were classified as having slight incontinence and 27% as severe. That the Korean women in this study had slight symptoms or that those women who had severe symptoms may have tended to refuse to participate in the study may explain this finding.
Incontinence-QOL

The mean score of Incontinence-QOL (83.7, SD =17.68) was higher than that in the general population (Patrick et al., 1999). Patrick and colleagues (1999) reported QOL scores varied according to the ages of the subjects. The mean scores of Incontinence-QOL were as follows: age 18-44 (Mean=56.6, SD=23.0), age 45-60 (Mean=62.3, SD=22.0), and over 61 (Mean=66.5, SD=21.7). They used a 5-point Likert scale instead of a 4-point scale, but the scores of QOL related to UI were lower than in this sample. The difference of mean scores could be explained by the bother-some-ness of UI including its duration and severity, and the characteristics of the sample. The sample in this study reported relatively slight symptoms of UI and it may have directly contributed to high UI specific QOL.

Help-Seeking Behavior

In the conceptual framework, HSB was defined as a decision of an individual which is a response to UI among aging Korean immigrant women. It doesn’t seem like a definition. HSB was measured by a 10cm visual analog scale. In addition, three questions related to HSB were asked.

The degree to which subjects had considered seeking professional help for incontinent symptoms in this sample was relatively low compared with the general population (Seim et al., 1995). The HSB of the sample was low (Mean=2.24, SD=3.11) with a range of 0-10. Thirteen percent of the respondents had sought help and only 15 (10.1%) reported that they had considered seeking help. More than half of the women (57.7%) had not considered seeking help at all. In contrast, Seim and colleagues (1995)
found that 20% of incontinent women had consulted a doctor, 18% had planned to do so, while 61.7% had not.

The reasons why aging Korean American women with UI had not considered seeking help for UI symptoms were similar to and different from reasons identified in the general population. Minimization and normalcy of UI were main reasons that prevented Korean American women with UI from seeking help from a health care provider. These two reasons have been the most frequently identified reasons given in previous studies in both the general population and ethnic minority groups (Hägglund et al., 2003; Kinchen et al., 2003; Bush et al., 2001). Sixty-two percent of the respondents regarded UI as a minor problem which could be self managed or they did not regard the symptoms as serious. Actually, most respondents were experiencing slight symptoms of UI and it may have been true that their incontinent symptoms were tolerable, thus they minimized their symptoms. One way to deal with UI is to deny its importance: ‘it is not really a problem’. Most studies have reported that women with UI regard UI as a natural part of aging, thus, there is no need to seek treatment.

As discussed in chapter 1, minimization and normalcy of UI are consistent with the concept of ageing as disengagement. There was a tendency to minimize problems and to attribute them to age-related changes. UI is often regarded as a normal aspect of a woman’s inheritance and have incorporated UI into the biography of a woman’s body (Peake & Manderson, 2003). The cultural construction of UI related to ageism leads women to abandon thoughts of seeking help for UI. Ageism has resulted in ignoring UI as only an elder’s problem since it is viewed as a normal part of aging. Therefore, women
do not aggressively seek help from health professionals. Patient education needs to emphasize that UI is not a normal part of aging and is not a minor problem.

Language barriers were cited as one of the obstacles that prohibited help-seeking among these subjects. This has been supported by a previous study of Pakistani women with UI in the UK (Wilkinson, 2001). Seven percent of the respondents in this study said that they had a problem communicating with health care professionals in English. Korean immigrant women who are unable to speak or read English had difficulties in accessing health care services because it was not possible to schedule appointments using Korean or to communicate with health professionals in Korean. UI was an uncomfortable topic and difficult to express in English. This was a little different from failure to communicate in the general population. If asked how problematic symptoms were, the patient’s interpretation of the word ‘problem’ takes on a different frame of reference for minority women.

Two unique reasons why Korean American women with UI had not considered seeking help were explored: a lack of health insurance and fatalism. These reasons have not been cited in any of the studies in the general population or in other ethnic minority groups. Twelve percent of the respondents reported that they could not afford health care services because of a lack of health insurance. Korean women reported that they could not afford to pay for expensive medical procedures for evaluation and treatment of UI because of their low income. Annual family incomes of the sample were much lower than that of all Koreans in the U.S. It was reported that annual Korean families’ incomes showed an extremely skewed distribution relative to other groups in the U.S. Annual
Korean families’ incomes were $72,567 with a median of $50,000 (The U.S Bureau, 2000). Almost half of the respondents (47.7%) reported having family incomes of more than $40,000, 13.4% of the respondents reported less than $9,999 and 29.5% reported $10,000-39,999.

Although almost three-quarters of the respondents had health insurance, twenty-one percent of the women who had health insurance depended on public assistance programs, such as SSI and AHCCCS. In addition, diagnostic tests for UI are not covered under the SSI or AHCCCS, and the use of pelvic floor electrical stimulation as a primary therapy is not covered by insurance. Both a lack of health insurance and uncovered health insurance benefits could be obstacles to accessing health care for UI diagnosis and treatment.

Three (5.1%) respondents stated that UI could resolve spontaneously. Interestingly, all three women had given birth in the previous year and were in their early 30’s. This belief was associated with fatalism about UI among Korean women. As discussed in chapter 1, this belief is a unique phenomenon among Korean women in that they tend to link women's health to insufficient rest after child birth. These three women believed that once they took good care of themselves after another child birth, the UI problem could spontaneously be resolved.

None of the respondents in this study mentioned embarrassment and low expectation about UI treatments as the reasons for not seeking professional help. Previous literature in both the general population and ethnic minority groups suggested that embarrassment and low expectation about available treatments prevented women from
discussing UI with their health care provider (Norton et al., 1988; Hägglund et al., 2003; Rizk et al., 1999; Hannestad, Rortveit & Hunskaar, 2002; Mason et al., 2001; Margalith et al., 2004; Kinchen et al., 2003; Bush et al., 2001). However, the participants who agreed to be a part of the research may have been more open to talk about their incontinence than those who chose not to participate. Another explanation is that embarrassment may not be taken into account as the first obstacle to impede seeking help among Korean American women.

Fewer Korean American women sought help for UI than in the general population. While help-seeking for UI varied from 15.9% to 83% in the general population (Burgio et al., 1994; Herzog et al., 1989; Kinchen et al., 2003; Goldstein et al., 1992; Diokno et al., 1986; Stoddart, et al. 2001; Roe et al, 1999; Palmer et al., 1999; Rizk et al., 1999; Linois et al., 2000; Hannestad, Rortveit, Hunskaar, 2002; Hägglund et al., 2003; Koch, 2006), in the current study only nineteen (12.8%) responded they had visited a health care provider for UI.

In this study, Korean American women sought help for UI less often than African American women (Novielli et al., 2003) and slightly more often than other Asian ethnic groups (Sampselle et al., 2002). Although Novielli and colleagues (2003) found a low rate of seeking care in African American women (39%) compared with whites (52%), it was higher than findings in this study. In contrast, seeking help of in the Sampselle and colleagues study (2002) among Asian ethnic groups was less common than the current study. Sampselle and colleagues (2002) reported that the percentage of whites (13.7%) who discussed UI with health care providers was higher than African Americans (12.5%),
Japanese (10.2%), Hispanics (7.8%), and Chinese (5.6%). However, the Sampselle and colleagues study (2002) had a relatively small sample of Asian ethnic minorities compared to whites and African Americans. Future studies with large samples will be needed to investigate the HSB among ethnic minorities. Health care providers need to be aware of low rates of seeking care among Korean women for this problem, and the need for further education in this area.

It was noted that Korean women cope with urinary symptoms with nonmedical measures rather seeking professional help. This finding has been consistently supported in the literature (Ricci et al., 2001). Pelvic muscle floor exercise was one of the commonest strategies women used (Ricci et al., 2001). Thirteen of the women who had tried some treatment for UI (n=19) had practiced pelvic floor exercises on their own, apparently with unsatisfactory results. Participants did not obtain education from professionals but rather from TV or Korean health magazines. The important point of the exercise was not to increase abdominal pressure, but rather to constrict the anus and vagina. However, most women increased abdominal pressure when performing pelvic floor muscle exercise. Pelvic floor muscle exercise has been successful to treat stress and urge UI. For good results, women need to be educated in how to perform pelvic floor exercise correctly.

Discussion of Research Question One Results

Research question one asked “what are the reliabilities of the five newly translated measures and the validity of one newly developed measure?” Psychometric properties were examined for the reliability and validity. The equivalence of the English
and Korean language versions of the four measures was supported by data obtained from 22 bilingual women. A high correlation between the total scores on the English and Korean versions of the five instruments indicated that participants responded very similarly to the items, regardless of language.

The reliability of the four newly translated instruments, content validity of the five measures, and the construct validity of the Social Support Scale have been established among Korean women (N=149). Translation of the Family Tradition and Authority Orientation Scale was adequate as indicated by a high correlation between the total scores on the English and Korean versions of the scale ($r=.84$). However, the reliabilities of both versions of the scale were low for the bilingual women: English version ($\alpha=.48$) and Korean version ($\alpha=.45$). When the instrument was administered to the total sample (N=149), the internal consistency of the scale was .57. While internal consistency increased, it did not meet the criterion level (.70). The difference in the Cronbach’s alphas between the bilingual and the total sample could be explained by the sample size.

Two possible explanations for the low reliability of the Family Tradition and Authority Orientation Scale in the total sample could be proposed. First, only one subscale of the Ethnocentrism Scale was utilized. Utilizing the subscale of a scale may result in a failure to adequately measure the focal concept. Second, only three items of the Family Tradition and Authority Orientation Scale were used to measure adherence to family tradition and authority. Fewer than five items in a scale may decrease the reliability of the scale.
Discussion of Research Question Two Results

Research question two asked “What factors would affect the HSB of aging Korean American women with UI?” The results indicated that perceived need (severity of UI and Incontinence-QOL) and family and community resources (social support) were significant predictors of HSB among aging Korean American women with UI. Predisposing factors (cultural, health beliefs and social structure) were not significant predictors. As evidenced in the several studies using the Behavioral Model (Berki & Kobashigawa, 1976; Honda, 2003; Mitchell & Krout, 1998; Stoller, 1982; Wolinsky et al., 1983; Herzog et al., 1989), need factors (severity of UI and Incontinence-QOL) are the most immediate reasons for individuals to seek health care and enabling factor (social support) support the occurrence of HSB as well. The ensuing discussion will present analyses for this question in regards to the relationships among each predictor and HSB.

Predisposing Predictors

Culture Composite and HSB

The hypothesis, HSB is negatively influenced by the culture composite, was not supported. The culture composite consisted of low acculturation, adherence to family tradition and authority orientation, and preference for a woman health care provider. The culture composite was one of the predisposing factors in the conceptual framework. Predisposing factors include variables that describe the propensity of aging Korean American women with UI to utilize health services. These properties exist prior to the onset of help-seeking.
When the culture composite variable was added into the analysis, it did not explain any variance. Little attention has been given to the relationship between acculturation and HSB among ethnic minority women with UI in the U.S. Reasons for the non-significant relationship between the cultural composite and HSB may be a lack of variability in acculturation and the low reliability of the Family Tradition and Authority Orientation Scale.

Health Beliefs and HSB

Knowledge and Attitudes About UI and HSB.

The hypothesis, HSB is positively influenced by knowledge and attitudes about UI, was not supported. The health beliefs variable was one of the predisposing factors in the conceptual framework. When knowledge and attitudes about UI were added into the multiple regression, controlling for other variables, it explained an additional 1.5% of the variance (Total $R^2 = .018$), but it was not a significant predictor of HSB. The finding was inconsistent with previous studies. Numerous studies on HSB among women with UI indicate that health beliefs and attitudes were main reasons that impeded women’s seeking help in both the general population and among ethnic minority groups (Goldstein et al., 1992; Bilington, 1999; Rizk et al., 1999; Dugan et al., 2001; Mason et al., 2001; Walters, Illiffe, & Orrell, 2001; Hägglund et al., 2003; Kinchen et al., 2003; Minassian, Drutz, & Al-Badr, 2003; Horrocks et al., 2004).

The discrepancy between the finding of this study and previous studies could be explained by the sample characteristics. The sample in this study was less knowledgeable and had more negative attitudes toward UI compared to that in other studies (Kubik et al.,
The numbers of correct responses to the items on the Incontinence Quiz Scale in this sample were lower than those in other studies of the general population (Branch et al., 1994; Keller et al., 1999). This might impede help-seeking among Korean American women with UI.

**Social Structure and HSB**

The hypothesis, HSB is positively influenced by social structure, education and employment, was not supported. Social structure was one of the predisposing factors in the conceptual framework. When the social structural variables were added to the model, the increment to $R^2$ was .017 (Total explained variance=35.7%).

**Education and HSB**

The relationship between education and HSB among Korean American women with UI was investigated and the results showed that there was no relationship. The finding was consistent with previous research in the general population (Burgio et al., 1994; Margalith, Gillon, & Gordon, 2004; Hägglund et al., 2003; Yu et al., 2003; Dugan et al., 2001; Hannestad et al., 2002; Stoddart et al., 2001). In contrast, the finding was not consistent with previous studies targeting minority women with UI (Margalith, Gillon, & Gordon, 2004; Hägglund et al., 2003; Yu et al., 2003; Dugan et al., 2001; Hannestad et al., 2002; Stoddart et al., 2001).

**Employment and HSB**

The relationship between employment and HSB among Korean American with UI was investigated and the result showed that there was no relationship. The relationship between employment status and HSB among women with UI was controversial. The
finding did not support previous studies. Unemployment has been reported as one of the barriers to seeking professional help among the general population of women with UI in the UK (Roe et al., 1999; Hannestad et al., 2002; Kinchen et al., 2003).

The reason why the findings of this study were different from previous ones may be explained by the use of modeling. The Behavioral Model suggests an explanatory process or causal ordering where the predisposing factors might be exogenous such as demographics and social structure. Higher education and employment status were not directly related to seeking help. There might be exogenous variables such as health care support. The relationship between social structure and health care support were not explored in this study. As discussed in the description of employment, although 40.9% of the respondents were employed, 27.9% of the employed women did not have health insurance.

Enabling Predictors

*Family and Community Resources Composite and HSB*

Family and community enabling resources were measured by the health care support composite (health insurance and a regular source of health care), social support, and transportation. When the family and community resources composite variables were added while all other variables were held constant, it explained an additional 14.5% of the variance (Total explained variance=16.5%). Only social support was an enabling factor for health service use among aging Korean American women with UI.
Health Care Support Composite and HSB

Health care support was not a significant predictor of help seeking among Korean American women with UI. The health care support composite was constructed from health insurance and a regular source of health care. Health insurance has not been a factor that influences HSB in women with UI in any study. Thus, it is not possible to compare the findings of this study with previous studies. However, it is well known that health insurance was one of the most striking predictors to health care access among Koreans for any reason (Ru, Young, & Park, 2001). Ru, Young, and Park (2001) suggested that a lack of health care insurance was one of the factors that impeded their subject access to health care in their study.

There are two possible explanations about the different findings between the current study and previous studies: unfamiliarity with the health care system and lack of awareness of accessible and available health services resources. It has been suggested that some enabling factors are necessary but not sufficient conditions for health care use (Anderson & Newman, 1974). The low prevalence of help-seeking by insured individuals in this study was notable. Song (1993) reported that Korean American women were less likely to utilize a private physician than women in the general population because of their unfamiliarity with the U.S. health care system. The social and health services in the U.S. are complex, and many do not exist in Korea. Moon, Lubben, and Villa (1996) also found extremely low levels of awareness of most of the services, suggesting that most services hardly exist for Korean American elders. Korean women with UI may not be familiar with the health care delivery system in the U.S.
Lack of information about accessible and available of health service resources, and where and how to get services when needed appears to be the major reasons for the underutilization services among Korean Americans (Song & Moon, 1997). There is further evidence that Korean American elders do use services known to them, pointing to the potential effectiveness of increasing service awareness (Moon, Lubben, & Villa, 1996). As evidenced in the finding of the Incontinence Quiz Scale, most women with UI were not aware of available treatments modalities for UI.

Korean American women’s regular source of health care was not associated with HSB for UI. Keeping regular appointments for routine/preventive UI care has been reported as a predictor in the general population (Burgio et al., 1994; Kinchen et al., 2003). Women with more experiences patients had more opportunities to mention their incontinence to their health care provider and because of familiarity they may be more comfortable mentioning the problem. In general, women who have contact with a health care provider more frequently for regular visits maybe more likely to indicate a higher prevalence of other complaints and diseases and/or have a different threshold or attitude towards seeking help.

Social Support and HSB

The hypothesis, HSB is positively influenced by social support, was supported. In other words, women who had high levels of social support were more likely to seek help for UI symptoms. Illuminating the role of social support in influencing HSB, the findings of the current study were consistent with previous studies. A few studies have been done to explore the relationship between social support and HSB among women with UI in the
general population. Previous studies suggested that social support from family, friends and available information about UI in a community facilitates help-seeking among women (Burgio et al., 1994; Haggar, 1995).

Transportation and HSB

The hypothesis, HSB is positively influenced by transportation, was not supported. This may have been due to the fact that transportation was a dummy code which is a violation of linear regression.

Need Predictors

Perceived Need and HSB

The hypothesis, HSB is positively influenced by perceived need, was supported. Perceived need accounted for an additional 19.3% of the variance when perceived need was added while all other variables were held constant (Total explained variance=35.8%).

Severity of UI and HSB

Severity of UI and Incontinence-QOL were significant predictors of HSB. This study demonstrated that HSB among aging Korean American women with UI increased with the increasing severity of the incontinence. This is consistent with numerous studies (Rizk et al., 1999; Dugan et al., 2001; Peters et al., 2004; Sandvik, 1993; Holst & Wilson, 1988; Burgio, Matthews, & Engel, 1991; Reckers, Drogendijk, Valkenburg & Riphagen, 1992; Hunskaar et al., 2000; Hägglund et al., 2001; Hannestad, Rortveit & Hunskaar, 2002; Stoddart et al., 2001; Kinchen et al., 2003; Margalith et al., 2004; Sampselle et al., 2002). One mechanism by which severity may affect HSB is by influencing an
individual’s appraisal of the situation as being a health threat. In other words, the impact of incontinence and use of services depends on a patient’s perceptions of the problem (Stoddart et al., 2001).

Incontinence-QOL and HSB

Aging Korean American women who were more likely to seek help were also experiencing low QOL related to UI symptoms. The finding was consistent with previous studies among women in both the general population and ethnic minority groups (Wagner et al., 1996; Dugan et al., 2001; Hägglund et al., 2001; Kinchen et al., 2003; Margalith, Gillon, & Gordon, 2004; Hägglund et al., 2003).

In summary, the predisposing characteristics accounted for 2.0% of the variance, enabling resources added 14.5%, and need added an additional 19.3%. None of the predisposing factors was a significant predictor of HSB among Korean American women with UI.

Discussion of Research Question Three Results

The findings for research question three concluded that severity of UI did not mediate the relationship between the biological risk factor composite and HSB. Even if a woman was at high risk of having UI, unless she had severe symptoms of UI, HSB did not occur. No studies have been done to investigate the mediator effect of the severity of UI between biological risk factors and HSB.

The first regression analysis showed that the biological risk factor composite was not significantly related to the severity of UI. The finding did not support previous studies. Previous studies have suggested that more severe incontinence occurs with
increasing age or with a reproductive history of multiple childbirths (Thomas et al., 1980; Sommer et al., 1990; Foldspang et al., 1992). In this study, increasing age and variation in parity level were not associated with severity. Cumulative effects of parity have been observed in other studies (Sommer et al. 1990), but in this study, higher parity did not necessarily add to symptom severity. A caution should be given to the number of childbirths. While the mean number of parity of the sample was two, previous studies reported that four or more than four childbirths could be related to severe UI. In addition, aging could be an issue since the sample of this study included subjects over 32 years old and 45% of the women were younger than 50 years old.

The relationships between severity of UI, menopause status and having undergone a hysterectomy are controversial (Thom & Brown, 1998). The published evidence is not convincing for the contribution of menopause status to severity of UI. There have been conflicting reports about the role of menopause, with some investigators finding prevalence equal between pre and post menopausal women, but severe levels of incontinence in postmenopausal women (Rekers et al., 1996; Laycock & Jerwood, 1991). Others have reported lower severity levels of incontinence after menopause (Brown et al., 1996). Menopausal status of the sample was normally distributed. Miller and colleagues (2003) reported a history of hysterectomy was associated with incontinence severity in mid-age women but not in older women. There was a lack of variation in the distribution of hysterectomy. The findings suggested that menopausal status and a history of hysterectomy were not significant predictors of severity.
The second regression analysis demonstrated that the biological risk factor composite was not significantly associated with HSB. The finding was inconsistent with previous studies. In numerous studies, increasing age was one of the most influential factors leading to seeking help among women with UI (Johnson II et al., 1998; Ricci et al., 2001; Hägglund et al., 2001; Hägglund et al., 2003; Peters et al., 2004; Holroyd-Leduc & Straus, 2004; Kim, 2001; Kinchen et al., 2003; Kubik et al., 2004; Novielli et al., 2003; Sampselle et al., 2002; Hannestad et al., 2002; Reckers et al., 1992). Aging could be an issue. A consideration should be given to the number of childbirths, menopause, and hysterectomy because none of the studies reported that they were associated with HSB.

The third regression analysis indicated that severity of UI was independently associated with HSB, accounting for 17.7% of variance. In the general population, it has been found that the severity level increases the likelihood of discussing incontinence with a health care provider. The finding of this study supported previous studies (Seim et al., 1995; Reckers et al., 1992; Burgio et al., 1994; Herzog et al., 1989).

Discussion of Research Question Four Results

The hypothesis, enabling predictors (family and community enabling resources) act as moderator to need predictors (perceived need) was supported. The findings for research question four concluded that both health care support composite and social support had a moderator effect with severity of UI and Incontinence-QOL in predicting HSB among Korean American women. In other words, HSB among Korean American women with UI who had severe urinary symptoms and low UI specific QOL was
triggered by high health care support and high social support to seek help. No studies have been conducted to investigate the interaction effects of enabling factors between severity of UI and Incontinence-QOL and HSB among women with UI.

Supportive family and friends may be able to provide informational support (e.g., treatment options) about UI as well as a supportive environment where their loved ones may feel less anxious or embarrassed about the condition. These findings emphasize the need to assess the types of social support and the context in which they operate.

Study Limitations

The current study has several limitations that might affect the validity of the results. The limitations relate to methodological, statistical, and measurement issues. Methodological issues concern the research design, sampling and data collection procedures. With the use of cross-sectional designs, it must be emphasized that the findings cannot show cause and effect relationships between various predictors and HSB. Rather, only an association between the predictors and HSB can be shown. Longitudinal studies are needed to delineate the factors causally related to HSB in women with UI.

Convenience sampling was used to target a community-dwelling sample of Korean American women with UI. The sample was relatively small, thus limiting the generalizability of the findings to other populations. A selection bias was likely in that subjects were volunteers. Participants who wanted to participate in this study may have been more open or willing to talk about their urinary symptoms. Their perspective may have been somewhat different from those who were not willing to talk about their
condition. These might cause systematic bias in sample selection and limit the generalizability or external validity of the study findings.

Data collection methods may result in response error. Data collection methods were either self-reported or administered face-to-face. Participants were asked to choose whether they wanted to fill out the questionnaires by themselves or to have the researcher read the questions to them. The older women with visual problems or women who were illiterate tended to choose to have the question read. Although self-report represents a powerful mechanism for obtaining data, researchers who use this approach should always be aware of the risk of response biases; that is, the tendency of some respondents to distort their responses. The most pervasive problem is a person’s tendency to present a favorable image of oneself (Polit & Beck, 2004). It is recognized that face-to-face administration provides a more optimistic picture of health than does self-administration (Weinberger, Oddone, Samsa, & Landsman, 1996). Also, the self-reported reasons why they did not seek help are retrospective, which introduces the possibility of response error.

Statistical issues concern the skewness of the dependent variable and a lack of variation in acculturation. The distribution of the score of HSB was negatively skewed. Skewness is problematic when data are analyzed using multiple regression that assumes a normal distribution of the dependent variable. This skewness decreased the variability in HSB and a lack of variation in the acculturation led to difficulties in determining true effects that might have existed.

Measurement issue concerns the reliability of the instruments used particularly for the Family Tradition and Authority Scale. All instruments were originally developed for
the general population in the U.S or Norway. All instruments showed adequate reliability and content validity within the Korean context. However, the Family Tradition and Authority Orientation Scale had some limitations when it was used with participants. The scale had three items which may not have been appropriate to measure the concept. Also, it was not a UI or disease specific instrument and did not measure decisions about health care access. Low internal consistency of the scale may be a threat to internal validity.

Implications

The study has implications for nursing research, theory, and practice. For nursing research, the scales were translated into Korean to administer to a Korean population. Based on their psychometric properties, the instruments used demonstrated that they are culturally appropriate tools to use with Korean American women with UI. Korean researchers and health care providers can use the instruments to assess factors when Korean American seek help for UI as well as to design and evaluate interventions to increase their seeking help. No research has been conducted on factors among Korean American women with UI.

For nursing theory, the theoretical model has been developed from the theoretical perspective of Social Ecological Theory of Health Promotion and the theoretical framework of Behavioral Model for Vulnerable Populations (Gelberg et al., 2000). The model illustrates the relationship between individual factors and socio-cultural factors for predisposing, enabling, and need factors for HSB among Korean American women with UI. The test of the model through this research suggested that the Behavioral Model
explains a relatively high percentage of variance in HSB by community-dwelling Korean American women with UI.

For nursing practice, the findings of this study showed that perceived need was one of the most important predictors to explain HSB among the Korean American women with UI. Understanding the critical link between UI and QOL is pivotal to the efficacy of screening and early intervention (Wilson, 2003). Health care providers need to be aware that few women seek help for this problem, and that the need for education is great. Nurses are the first health care professional who detect, assess and treat UI. Education about managing UI can markedly improve QOL among women with UI. Nurses need to take an active role in educating women about the prevention of incontinence as well as about the variety and effectiveness of treatments.

Recommendations

Two recommendations for future study are proposed. First, regarding instrumentations, the application of the instruments used in this study to other samples of Korean women will require refinement of the scales. Reliability of the Family Tradition and Authority Scale suggested that a scale should be developed to better measure the importance to the individual of family customs and traditions and the degree of authority possessed by the head of the household in decisions related to health decisions. The scale should also include items to measure the primary decision maker on health care uses in a family.

Second, regarding the conceptual framework, cultural factors were not significant predictors of HSB among Korean women. It may be related to instrumentation issues
such as using a non-established instrument. Also, every possible cultural factor which may be relevant to HSB may not have been taken into consideration. Future study should involve in-depth interviews with selected individuals to obtain more meaningful insights using qualitative methods on which to base further study. For instance, ethnography could be useful to identify the cultural construction of UI among Koreans and Korean women. In addition, in this study only transportation for community resources was considered in the conceptual framework. For future research, more consideration should be given to community resources such as ratios of health personnel and facilities to population, price of UI health services, region of the country, and urban-rural characteristics.

Summary

UI, one of the great sleeping giants of geriatrics, continues to remain just that—a formidable obstacle that may cause us to stumble as we age (Wilson, 2003). This study examined the predictors of HSB among 149 Korean American women with UI. The conceptual framework was developed considering both individual and socio-cultural factors of HSB among this population.

This chapter describes discussion of the findings for each research question. HSB among Korean American women with UI was influenced by individual (severity of UI and Incontinence-QOL) and social factors (health care support and social support) rather than cultural influences. In addition, perceived need variables explained more variance in HSB than either family and community resources or predisposing variables. This study revealed new information about the moderator effects of enabling factors (health care
support and social support) on perceived need (severity of UI and Incontinence-QOL) to facilitate seeking help.

It is noteworthy that the notion of UI among Korean American women was influenced by social and cultural construction. Particularly, collectivism of social construction and ageism, and fatalism of cultural construction of UI has permeated to Korean women’s beliefs about incontinence. Awareness of the social structure and culture that surround UI may also lead women to increase their voices and to empower them in American society. This may ultimately lead to increasing awareness of UI as a significant problem among minority women and it may help to establish health policy for minority women with UI.
APPENDIX A

HUMAN SUBJECTS AND SUBJECTS’ DISCLAIMER FORM
22 March 2006

Young Mi Kang, Ph.D. Candidate
Advisor: Linda Phillips, Ph.D.
College of Nursing
PO Box 210203

RE: THE PREDICTORS OF HELP SEEKING AMONG KOREAN AMERICAN WOMEN WITH URINARY INCONTINENCE

Dear Ms. Kang:

We received documents concerning your above cited project. Regulations published by the U.S. Department of Health and Human Services [45 CFR Part 46.101(b) (2)] exempt this type of research from review by our Institutional Review Board. Note: Copies of your Disclaimer Forms (English and Korean), with IRB approval stamp affixed, are enclosed for duplication and use in enrolling subjects.

Please be advised that clearance from academic and/or other official authorities for site(s) where proposed research is to be conducted must be obtained prior to performance of this study. Evidence of this must be submitted to the Human Subjects Protection Program office.

Exempt status is granted with the understanding that no further changes or additions will be made either to the procedures followed or to the consenting instrument used (copies of which we have on file) without the review and approval of the Human Subjects Committee and your College or Departmental Review Committee. Any research related physical or psychological harm to any subject must also be reported to each committee.

Thank you for informing us of your work. If you have any questions concerning the above, please contact this office.

Sincerely,

Rebecca Dahl, R.N., Ph.D.
Director
Human Subjects Protection Program

cc: Departmental/College Review Committee
SUBJECT'S DISCLAIMER FORM

Title of Project: The predictors of help seeking among Korean American women with urinary incontinence

You are being invited to voluntarily participate in the above-titled research study. The purpose of the study is to identify factors that influence Korean women’s decisions to seek help for urinary incontinence and to test the translated questionnaires. You are eligible to participate because you are a Korean American woman who is age 30 or over and have said you have problems with urine leakage.

If you agree to participate, your participation will involve filling out 8 questionnaires about your background, your opinions about urinary incontinence or urine leakage. The questionnaires will be provided to you at an appointment in your home or a location convenient to you. Completing the questionnaires will take approximately 1 hour. You may choose not to answer some or all of the questions. Your name will not appear on the questionnaires.

Any questions you have will be answered and you may withdraw from the study at any time. No known risks from your participation and no direct benefit from your participation are expected. There is no cost to you except for your time and you will be compensated with a small gift for your participation.

Only the principal investigator will have access to the your name and the information that you provide. In order to maintain your confidentiality, your name will not be revealed in any reports that result from this project. The questionnaires will be locked in a cabinet in a secure place.

You can obtain further information from the principal investigator, Young Mi Kang, PhD candidate at (520) 461-9242. If you have questions concerning your rights as a research subject, you may call the University of Arizona Human Subjects Protection Program office at (520) 626-6721.

By responding to the questionnaires, you are giving permission for the investigator to use your information for research purposes.

Thank you.

Young Mi Kang, RN, MSN, Doctoral Student

College of Nursing
Korean Version of Subject’sDisclaimer

연구목적: 요실금이 있는 한국여성의 건강추구행위

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실금을 가진 한국여성이 병원을 찾는 결정에 관련된 요소를 조사하기 위한 것입니다. 귀하
는 요실금을 경험한 30세 이상 여성이라고 해주신 연구에 자격요건에 해당합니다.

만약 귀하가 참여기를 동의한다면 요실금에 관한 구조화된 질문지를 작성하게 될 것입니다.
면담은 귀하의 편의에 따라 이루어 질 것이며 설문지 작성은 1시간 정도 소요될 예
정입니다. 귀하는 어떤 질문 혹은 모든 질문에 대해 답하지 않을 수도 있습니다. 귀하의 성
명은 설문지에 포함 기재되지 않을 것입니다.

연구자는 귀하의 어떤 질문에도 응답할 것이며 참여자는 어떤 때라도 원할때 연구를 중단
할 수 있습니다. 연구참여에 어떠한 의무도 없으며 적절적인 이익이 없을 것입니다. 귀하
의 시간 이외에 어떠한 비용도 소요되지 않을 것이며 귀하는 작은 선물을 받을 것입니다.

연구자만이 귀하의 성명과 신상정보를 알고 있을 것이며 귀하의 기밀성 보장을 위해 어떤
결과 보고서에도 귀하의 성명이 기재되지 않을 것입니다. 면담내용은 안전에 장소에 캐비
넷으로 잠귀질 것입니다.

필요한 정보를 연구자, 강영미로부터 얻을 수 있으며 연락처는 (520)-461-9242입니다. 만
약 귀하가 참여자로서의 권리에 의문이 생기면 애리조나 주립대학의 참여자 보호 프로그
램 사무실 (520) 626-6721로 연락할 수도 있습니다.

이 설문에 응하는 것은 연구자가 연구목적에 따라 귀하의 정보를 이용할 수 있다는 것을허
용하는 것입니다. 감사합니다.

강영미, 간호학사과생
APPENDIX B

INSTRUMENTS
1. Demographic Information Questionnaire

Subject ID: ___________    Date: ____________

1. Age? ________ yrs
3. How many children have you delivered vaginally? ________
4. Which is your menopausal status?
   1) I have not started menopause   2) I have finished menopause
5. Have you ever had hysterectomy on your uterus or bladder?  1) Yes  2) No
6. Education? ________________yrs
7. What is your employment status?  1) Employed  2) Unemployed  3) Retired
8. What is your annual family income?
   1) Less than $9,999
   2) Between $10,000 and $39,999
   3) More than $40,000
9. Do you have insurance?  1) Yes  2) No
   If yes, what kind? (can circle more than one)
   1) Private insurance-spouse   2) Private insurance-self   3) SSI   4) ACCHSS   5) Other, please specify: _____________
10. Do you have a regular source of care?  1) Yes  2) No
    If yes, what kind?  1) Physician  2) Nurse Practitioner  3) Other______________________
11. Do you need help with transportation when you seek health services?  1) Yes  2) No
12. Do you prefer a female rather than a male health care provider?  1) Yes  2) No
2. Help-Seeking Behavior Scale

1) Have you ever considered seeking professional help for your urinary leakage? (Please mark “x” on the line)

| Not at all | Strongly Considering |

2) What is the main reason that you have not considered seeking professional help for your urine leakage?

______________________________________________________________

3) Have you sought help for your problems with urine leakage? 1) Yes 2) No

If yes, who did you seek? 1) Physician 2) Nurse Practitioner 3) Other ________________

4) Have you tried to do anything about it? 1) Yes  2) No

If yes, what did you do?

___________________________________________________________
3. The Brief ARSKA-II (English Version)

This questionnaire is to measure of acculturation. Circle a number between 1 and 5 next to each item that best applies. For each statement, please respond to each item by indicating the extent to which that statement describes your symptoms and feelings: 1=not at all, 2=very little/not very often, 3=moderately, 4=much/very often, and 5=extremely often/almost always.

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<th>3</th>
<th>4</th>
<th>5</th>
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<td>1</td>
<td>I speak Korean</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<td>I speak English</td>
<td>1</td>
<td>2</td>
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<tr>
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<td>I enjoy speaking Korean</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>4</td>
<td>I associate with Anglos</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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</tr>
<tr>
<td>5</td>
<td>I enjoy listening to English language movies</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>6</td>
<td>I enjoy Korean language TV</td>
<td>1</td>
<td>2</td>
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<td>I enjoy Korean language movies</td>
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<td>2</td>
<td>3</td>
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<tr>
<td>8</td>
<td>I enjoy reading books in Korean</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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</tr>
<tr>
<td>9</td>
<td>I write letters in English</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>5</td>
</tr>
<tr>
<td>10</td>
<td>My thinking is done in the English language</td>
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<td>2</td>
<td>3</td>
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<td>5</td>
</tr>
<tr>
<td>11</td>
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<td>3</td>
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<td>12</td>
<td>My friends now are of Anglo origin</td>
<td>1</td>
<td>2</td>
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</tbody>
</table>
The Brief ARSKA-II (Korean Version)

다음 문항은 이민과 관련한 질문입니다. 해당란에 표기하세요. 
1=전혀 아니다, 2=가끔, 3=그저 그렇다, 4=자주 그렇다, 5= 거의 항상

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<td>4</td>
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<td>나는 영어로 영화보는 것을 좋아한다</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>나는 한국 TV 보는 것을 좋아한다</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>나는 한국영화 보는 것을 좋아한다</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8</td>
<td>나는 한글책 읽는 것을 좋아한다</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td>나는 영어로 편지를 쓴다</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10</td>
<td>나는 영어로 생각한다</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11</td>
<td>나는 한국어로 생각한다</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12</td>
<td>지금 내 친구들은 미국인이다</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

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4. The Family Tradition and Authority Orientation Scale (English Version)

Please respond whether you agree or disagree with each of these statements.

<table>
<thead>
<tr>
<th>No</th>
<th>Questions</th>
<th>Agree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Everybody in my family usually does what the head of the house says without question.</td>
<td>Agree</td>
<td>Disagree</td>
</tr>
<tr>
<td>2</td>
<td>My family usually waits until the head of the house is present before we have dinner</td>
<td>Agree</td>
<td>Disagree</td>
</tr>
<tr>
<td>3</td>
<td>In my family we think the old-time customs and traditions are important</td>
<td>Agree</td>
<td>Disagree</td>
</tr>
</tbody>
</table>

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The Family Tradition and Authority Orientation Scale (Korean Version)

다음 질문들은 가족들간의 관계에 대한 내용입니다. 해당란에 표기해 주세요.

<table>
<thead>
<tr>
<th>No</th>
<th>문항</th>
<th>그렇다</th>
<th>아니다</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>모든 가족들은 주로 가장이 말한 것에 대해 아무 문제 제기없이 따르는 편이다</td>
<td>그렇다</td>
<td>아니다</td>
</tr>
<tr>
<td>2</td>
<td>가족들은 저녁 식사 때 대개 가장이 나타날 때까지 기다린다</td>
<td>그렇다</td>
<td>아니다</td>
</tr>
<tr>
<td>3</td>
<td>내 가족들에게 있어 오랜 전통과 관습은 중요하다</td>
<td>그렇다</td>
<td>아니다</td>
</tr>
</tbody>
</table>

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5. The Incontinence Quiz Scale (English Version)

The following statements are related to urine leakage. For each statement, please respond to each item by indicating agree, disagree or don’t know.

<table>
<thead>
<tr>
<th>No</th>
<th>Questions</th>
<th>Agree</th>
<th>Disagree</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Involuntary loss of urine, often called leaky bladder or urinary incontinence, is one of the results of normal aging</td>
<td>A</td>
<td>D/A</td>
<td>D/K</td>
</tr>
<tr>
<td>2</td>
<td>Most people will involuntarily or accidentally lose control of their urine on a regular basis by the time they are 85</td>
<td>A</td>
<td>D/A</td>
<td>D/K</td>
</tr>
<tr>
<td>3</td>
<td>Many over-the-counter medications can cause involuntary urine loss</td>
<td>A</td>
<td>D/A</td>
<td>D/K</td>
</tr>
<tr>
<td>4</td>
<td>Other than pads, diapers, and catheters, little can be done to treat or cure involuntary urine loss</td>
<td>A</td>
<td>D/A</td>
<td>D/K</td>
</tr>
<tr>
<td>5</td>
<td>Once people start to lose control of their urine on a regular basis, they usually never regain complete control over it again</td>
<td>A</td>
<td>D/A</td>
<td>D/K</td>
</tr>
<tr>
<td>6</td>
<td>Most people who currently have involuntary urine loss live normal lives</td>
<td>A</td>
<td>D/A</td>
<td>D/K</td>
</tr>
<tr>
<td>7</td>
<td>Most physicians ask their older patients whether they have bladder control problems</td>
<td>A</td>
<td>D/A</td>
<td>D/K</td>
</tr>
<tr>
<td>8</td>
<td>Women are more likely than men to develop urinary incontinence</td>
<td>A</td>
<td>D/A</td>
<td>D/K</td>
</tr>
<tr>
<td>9</td>
<td>Most people with involuntary urine loss talk to their doctors about it</td>
<td>A</td>
<td>D/A</td>
<td>D/K</td>
</tr>
<tr>
<td>10</td>
<td>Involuntary urine loss is caused by only one or two conditions</td>
<td>A</td>
<td>D/A</td>
<td>D/K</td>
</tr>
<tr>
<td>11</td>
<td>Many people with involuntary urine loss can be cured and almost everyone can experience significant improvement</td>
<td>A</td>
<td>D/A</td>
<td>D/K</td>
</tr>
<tr>
<td>12</td>
<td>Involuntary loss of urine can be caused by several easily treatable medical conditions</td>
<td>A</td>
<td>D/A</td>
<td>D/K</td>
</tr>
<tr>
<td>13</td>
<td>The best treatment for involuntary urine loss is usually surgery</td>
<td>A</td>
<td>D/A</td>
<td>D/K</td>
</tr>
<tr>
<td>14</td>
<td>There are exercises that can help control urine if one leaks when they cough, sneeze, or laugh</td>
<td>A</td>
<td>D/A</td>
<td>D/K</td>
</tr>
</tbody>
</table>

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다음 질문들은 요실금에 대한 여러분의 생각을 측정하기 위한 것입니다. 자신이 아닌 대로 표시해 주시기 바랍니다.

<table>
<thead>
<tr>
<th>No</th>
<th>문항</th>
<th>그렇다</th>
<th>아니다</th>
<th>잘 모름</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>본의아닌 소변 유출은 방광이 새는 것 혹은 요실금이라고도 불리며 정상적인 노화의 결과이다</td>
<td>그렇다</td>
<td>아니다</td>
<td>잘 모름</td>
</tr>
<tr>
<td>2</td>
<td>85 세 정도가 되면 대부분의 사람들은 본의아니게 소변을 조절하지 못할 것이다</td>
<td>그렇다</td>
<td>아니다</td>
<td>잘 모름</td>
</tr>
<tr>
<td>3</td>
<td>의사처방없이 삶수 있는 많은 약물들이 본의아닌 소변유출을 야기할 수 있다</td>
<td>그렇다</td>
<td>아니다</td>
<td>잘 모름</td>
</tr>
<tr>
<td>4</td>
<td>패드, 기저귀, 도뇨관 이외에 본의아닌 소변유출을 치료하거나 중지할 수 있는 방법은 거의 없다</td>
<td>그렇다</td>
<td>아니다</td>
<td>잘 모름</td>
</tr>
<tr>
<td>5</td>
<td>일단 소변유출이 시작되면 실제로 완벽한 소변조절은 불가능하다</td>
<td>그렇다</td>
<td>아니다</td>
<td>잘 모름</td>
</tr>
<tr>
<td>6</td>
<td>본의아닌 소변유출이 있는 대부분의 사람들은 정상적인 삶을 살고 있다</td>
<td>그렇다</td>
<td>아니다</td>
<td>잘 모름</td>
</tr>
<tr>
<td>7</td>
<td>대부분의 의사들은 노인환자들에게 소변조절에 문제가 있는지 물어본다</td>
<td>그렇다</td>
<td>아니다</td>
<td>잘 모름</td>
</tr>
<tr>
<td>8</td>
<td>여성들이 남성들에 비해 요실금이 더 잘 발생한다</td>
<td>그렇다</td>
<td>아니다</td>
<td>잘 모름</td>
</tr>
<tr>
<td>9</td>
<td>본의아닌 소변유출이 있는 대부분의 사람들은 그것에 관해 의사에게 이야기한다</td>
<td>그렇다</td>
<td>아니다</td>
<td>잘 모름</td>
</tr>
<tr>
<td>10</td>
<td>본의 아님 소변유출은 하나 혹은 두 가지 질병에 의해 발생된다</td>
<td>그렇다</td>
<td>아니다</td>
<td>잘 모름</td>
</tr>
<tr>
<td>11</td>
<td>본의아닌 소변유출이 있는 대부분의 사람은 치료될 수 있고 거의 모든 사람이 원치한 향상을 경험한다</td>
<td>그렇다</td>
<td>아니다</td>
<td>잘 모름</td>
</tr>
<tr>
<td>12</td>
<td>본의 아님 소변유출은 치료가 쉬운 여러 가지 질병에 의해 발생할 수 있다</td>
<td>그렇다</td>
<td>아니다</td>
<td>잘 모름</td>
</tr>
<tr>
<td>13</td>
<td>본의아닌 소변 유출에 가장 좋은 치료는 주로 수술이다</td>
<td>그렇다</td>
<td>아니다</td>
<td>잘 모름</td>
</tr>
<tr>
<td>14</td>
<td>기침, 재채기 혹은 웃을 때 소변이 새는 것을 돕는 운동들이 있다</td>
<td>그렇다</td>
<td>아니다</td>
<td>잘 모름</td>
</tr>
</tbody>
</table>
6. The Social Support Scale (English Version)

The following statements describe ways in which you might feel from family, friend for urine leakage. For each statement, please respond to each item by indicating “Yes” or “No”.

<table>
<thead>
<tr>
<th>No.</th>
<th>Questions</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Had family members suggested seeking health professional help because of your urinary symptoms?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>2</td>
<td>Had friends suggested seeking health professional help because of your urinary symptoms?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>3</td>
<td>Are there any family members with whom you feel comfortable discussing urinary incontinence?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>4</td>
<td>Are there any friends with whom you feel comfortable discussing urinary incontinence?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>5</td>
<td>Have you ever been given information to help decide about seeking help for urinary incontinence?</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

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The Social Support Scale (Korean Version)

<table>
<thead>
<tr>
<th>No.</th>
<th>문항</th>
<th>예</th>
<th>아니오</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>가족들이 요실금때문에 건강전문가를 찾아 보라고 제안하였습니까?</td>
<td>예</td>
<td>아니오</td>
</tr>
<tr>
<td>2</td>
<td>친구들이 요실금때문에 건강전문가를 찾아 보라고 제안하였습니까?</td>
<td>예</td>
<td>아니오</td>
</tr>
<tr>
<td>3</td>
<td>요실금에 대해 편안하게 이야기 나눌 가족이 있습니까?</td>
<td>예</td>
<td>아니오</td>
</tr>
<tr>
<td>4</td>
<td>요실금에 대해 편안하게 이야기 나눌 친구가 있습니까?</td>
<td>예</td>
<td>아니오</td>
</tr>
<tr>
<td>5</td>
<td>요실금때문에 병원을 찾는데 도움이 되는 정보가 있었습니까?</td>
<td>예</td>
<td>아니오</td>
</tr>
</tbody>
</table>

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7. The Incontinence Severity Index Scale (English Version)

Please circle frequency and amount of your urine leakage.

<table>
<thead>
<tr>
<th>A. Frequency of UI</th>
<th>Once or less/month</th>
<th>Few times/month</th>
<th>Few times/week</th>
<th>Every day</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B. Amount of UI</th>
<th>Only drops or a little</th>
<th>More than a little</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C. Severity index (AxB)</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1-2</td>
<td>3-4</td>
<td>6-8</td>
</tr>
</tbody>
</table>

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The Incontinence Severity Index Scale (Korean Version)

<table>
<thead>
<tr>
<th>A. 요실금 빈도</th>
<th>한번 이하/한달</th>
<th>몇번/한달</th>
<th>몇번/일주일</th>
<th>매일</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B. 요실금의 양</th>
<th>몇방울 정도</th>
<th>몇방울 이상</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C. 심각성 (AxB)</th>
<th>약간</th>
<th>보통</th>
<th>심함</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1-2</td>
<td>3-4</td>
<td>6-8</td>
</tr>
</tbody>
</table>

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8. The Incontinence-QOL Scale (English Version)

The following statements describe ways in which you might feel as a result of events that urine leakage have occurred. For each statement, please respond to each item by indicating the extent to which that statement describes your symptoms and feelings: 0=extremely, 1=very much, 2=moderately, 3=a little, and 4=not at all.

<table>
<thead>
<tr>
<th>No</th>
<th>Questions</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I worry about not being able to get to the toilet on time</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>I worry about coughing and sneezing because of my incontinence</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>I have to be careful about standing up after sitting down because of my incontinence</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>I worry where the toilets are in new places</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>I feel depressed because of my incontinence</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>Because of my incontinence, I don’t feel free to leave my home for long periods of time</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7</td>
<td>I feel frustrated because my incontinence prevents me from doing what I want</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>I worry about others smelling urine on me</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9</td>
<td>Incontinence is always on my mind</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10</td>
<td>It is important for me to make frequent trips to the toilet</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11</td>
<td>Because of my incontinence, it is important to plan every detail in advance</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12</td>
<td>I worry about my incontinence getting worse as I grow older</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13</td>
<td>I have a hard time getting a good night’s sleep because of my incontinence</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14</td>
<td>I worry about being embarrassed or humiliated because of my incontinence</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15</td>
<td>My incontinence makes me feel like I’m not a healthy person</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16</td>
<td>My incontinence makes me feel helpless</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17</td>
<td>I get less enjoyment out of life because of my incontinence</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>18</td>
<td>I worry about wetting myself</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>19</td>
<td>I feel like I have no control over my bladder</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>20</td>
<td>I have to watch what I drink because of my incontinence</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>21</td>
<td>My incontinence limits my choice of clothing</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>22</td>
<td>I worry about having sex because of my incontinence</td>
<td>0</td>
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<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

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The Incontinence-QOL Scale (Korean Version)

다음 질문들은 요실금에 대한 여러분의 느낌과 생각을 측정하기 위한 것입니다. 해당란에 표기해 주시기 바랍니다. 
0=매우 그렇다, 1=그렇다, 2=그저 그렇다, 3=조금 아니다, 4=전혀 아니다

<table>
<thead>
<tr>
<th>No</th>
<th>문항</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>나는 제때에 화장실에 못 갈까봐 걱정되다</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>나는 요실금 때문에 기침, 재채기하기가 두렵다</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>나는 요실금 때문에 앓았다가 일어날때 조심해야 한다</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>나는 새로운 장소에 가면 화장실의 위치가 염려된다</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>나는 요실금 때문에 오울하다</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>나는 요실금 때문에 오랫동안 짜를 떼는 것이 불편하다</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7</td>
<td>나는 요실금 때문에 일에 방해를 받아 좌절감이 느껴진다</td>
<td>0</td>
<td>1</td>
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<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>내게 소변냄새가 날까봐 걱정된다</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9</td>
<td>나는 늘 요실금이 신경쓰인다</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10</td>
<td>자주 화장실에 가는 것이 내겐 중요한 문제이다</td>
<td>0</td>
<td>1</td>
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<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11</td>
<td>요실금으로 인해 모든 세세한 일을 미리 계획하는 것이 중요하다</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12</td>
<td>나이가 들어감에 따라 요실금이 더 악화되는데 아닐까 염려된다</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13</td>
<td>요실금 때문에 밖에 숨을 취하기가 어렵다</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14</td>
<td>요실금으로 인해 난처하게 되거나 창피를 당하게 될까봐 염려된다</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15</td>
<td>요실금이 내자신을 건강한 사람이 아니라고 느끼게 만든다</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16</td>
<td>요실금이 나를 무력하게 만든다</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17</td>
<td>요실금 때문에 나의 삶이 덜 즐겁다</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>18</td>
<td>나는 부적절하게 소변을 불가피 염려된다</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>19</td>
<td>나는 스스로 방광 조절을 못할 것 같이 느껴진다</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>20</td>
<td>요실금 때문에 (물, 음료 등) 마시는 것에 주의해야 한다</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>21</td>
<td>요실금 때문에 옷 선택에 제한이 있다</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>22</td>
<td>요실금 때문에 성관계가 염려된다</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

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REFERENCES


Andersen, R. M. (1968). Behavioral model of families' use of health services. Research Series No. 25. Chicago, IL: Center for Health Administration Studies, University of Chicago.


