OLDER WIDOWERS IN TAIWAN: EXPLORING OLDER MEN’S HEALTH-RELATED QUALITY OF LIFE FOLLOWING SPOUSAL BEREAVEMENT

By

YI-HSIU LIU

A dissertation submitted in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

WASHINGTON STATE UNIVERSITY
College of Nursing
AUGUST 2014

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To the Faculty of Washington State University:

The members of the Committee appointed to examine the dissertation of YI-HSIU LIU find it satisfactory and recommend that it be accepted.

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ACKNOWLEDGMENT

The dissertation would not be accomplished without all of my committee mentors’
maximum effort and wise guidance, as well as others’ kind assistance. Additionally, this study
was supported by the Delta Chi Chapter at Large of the Sigma Theta Tau International Honor
Society of Nursing. I have immense gratitude to many people for their generous support
throughout my study in the PhD program including the dissertation research and writing.

To my committee, I would like to thank my committee chair, Dr. Janet Katz, who is also
my adviser and has guided me through the whole journey of my PhD study. I appreciate her
for guiding me to clarify my research direction and facilitating my learning by sharing her
intelligence and rigorous research attitude. I would like to thank my committee co-chair, Dr.
Mel Haberman, who has contributed his expertise in health-related quality of life (HRQOL)
to my dissertation and was the key person assisting me move on to candidacy in an efficient
manner. I appreciate him for his understanding and encouragement, as well as demonstrating
concise scholarly writing skills, experience, and leadership. I would like to thank Dr.
Catherine Van Son, as a committee member, who has contributed her wisdom and
professional knowledge in gerontological nursing to my dissertation. I appreciate her for
facilitating my learning particularly in curriculum design and instructional strategies. I would
like to thank Dr. Celestina Barbosa-Leiker, as a committee member, who has guided me in
conducting quantitative research and statistical analysis. I appreciate her for inspiring me to
overcome challenges and accomplish "mission impossible." I would like to thank Dr. Carol
Allen who was originally on my committee and advised me to "listen to my heart" to
determine my direction.

To all of the faculty and staff, and each of my peers at WSU College of Nursing who
have supported and encouraged me in my PhD study. Many thanks to Jean LaBauve who has
supported me in writing and editing articles as well as the dissertation. Many thanks to Dr.
Roxanne Vandermause, Dr. Merry Armstrong, Dr. Tamara Odom-Maryon, who mentored me
working on the first research project regarding substance abuse treatment among teen girls.
Many thanks to Eileen Swalling who was the key person in bringing me into the doctoral
program and helped me settle down in Spokane. Many thanks to my buddy Dr. Barbara
Richardson who was the first "cougar" I met, picked me up in the airport and accommodated
me at her home. Many thanks to Dr. Merry Armstrong and my peers, Janet Wilhaus, Patrice
Griffin-Cod, and Alecia Nye for their generous offers to stay at their home. I wrote the first
three chapters while staying with Janet and Phil, the fourth chapter with Alecia at "the house
of PhD;" and prepared my final version of the dissertation at Dr. Vandermause's sweet home.

To all of the research participants and friends who have tried to help with recruitment.
Many thanks to my colleague and friends in Taiwan. Through hundreds of direct and indirect
recruiters' help, I interviewed 102 Taiwanese older widowers. Many thanks to the participants
who have bravely shared their experiences of spousal bereavement with me.

To National Tainan Institute of Nursing (NTIN) and Ministry of Education in Taiwan.

Thank you for providing me opportunity of pursuing my PhD in Nursing and financial support for the first two years.

Finally, many thanks to my father (Wan-Yi) who spent two years with us in Spokane to help out, my husband (Chun-Chen Andy) who tolerated separation from family, and my boys (Po-Chou Harrison and Po-Chen Vinson) who enrich my life and for their endless love and unselfish support. It is tough and challenging to go through the PhD in Nursing program at WSU, but I feel so proud and excited to reach the destination. Thanks god for letting me encounter so many nice people in Spokane. I am really a lucky and blessed one!
OLDER WIDowers IN TAIWAN: EXPLORING OLDER MEN’S HEALTH-RELATED QUALITY OF LIFE FOLLOWING SPOUSAL BEREAVEMENT

Abstract

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Older widowers face unique challenges during the transition to widowhood including decreased residual life expectancy, increased mortality, declining physical and psychological health, reduced social functioning, and impaired overall health-related quality of life (HRQOL) (Sun, 2009; van den Hoonaard, 2010). No literature reported HRQOL among Taiwanese older widowers. The purpose of this present study was to examine demographic characteristics, association among demographic and HRQOL indicators, demographic predictors of HRQOL, and the health-related needs of older widowers in Taiwan.

This quantitative cross-sectional study employed the World Health Organization Quality of Life (WHOQOL)-BREF Taiwan version instrument, an open-ended health-related needs question, and a demographic questionnaire. Data occurred from in-person interviews with 90 widowers over the age of 60 living in Taiwan. Participants had lowest HRQOL scores in social relationships ($M = 13.41, SD = 2.20$) and highest scores in physical health ($M = 14.68$, $SD = 2.53$). Correlation analysis identified years since bereavement correlated with environment (Pearson $r = .26, p = .01$) and environment (TW-Taiwan version item) (Pearson
years of marriage with social relationships (Pearson $r = .26, p = .02$) and social relationships (TW) (Pearson $r = .28, p = .01$); and past relationship with wife correlated with psychological health (Spearman's $\rho = -.24, p = .02$). Multiple linear regression found total income predicted overall QOL ($\beta = .35, p = .02$); lower HRQOL in social relationships was predicted by less years of marriage ($\beta = .81, p = .00$), less years since bereavement ($\beta = .55, p = .01$), older age ($\beta = -.39, p = .03$), and lower frequency of contacting friends ($\beta = -.30, p = .01$). Language and culture influenced some participant responses and no specific health needs were identified.

The findings provide fundamental understandings of identifying those Taiwanese older widowers who may be at risk of impaired HRQOL. This study adds information to nursing knowledge and science in developing culturally tailored bereavement interventions needed to facilitate older widowers' transition to widowhood with enhanced HRQOL.
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Dedication

This dissertation is dedicated to my father as an older widower and my mother who passed away in 2000. My mother had devoted all her love and life taking care of her husband and me as the only child. My father was lost in his first few years of bereavement which motivated me to explore the life of older widowers. He is now devoting all he has to help me with what I need. Endless thanks to my mother and my father for their endless love and support to me and my family. I would not have been able to reach this milestone without their unselfish love and support.
CHAPTER ONE

INTRODUCTION

Death of a spouse, also described as spousal bereavement, is ranked as the number one stressful event among forty-three events experienced over a life-time (Holmes & Rahe, 1967). On average, individuals lose 12% of residual life expectancy after the death of a spouse (van den Berg, Lindeboom, & Portrait, 2011). Life expectancy is measured at actual age, not from birth, e.g., in 2011, a 60 year old man with a life expectancy of 80 would lose 2.4 years (Roy, Phuhani, & Shi, 2011) and the residual life expectancy would be 77.6 years. Death of a spouse most frequently happens in later life. There is a positive correlation among stress-inducing life events, such as spousal bereavement, and diminishing health, including increased morbidity and mortality for the older adult (Cearlock & Laude-Flaws, 1997; Stroebe, Schut, & Stroebe, 2007; Subramanian, Elwert, & Christakis, 2008). For some bereaved older adults, “…mental health and quality of life are severely impaired, and bereavement-related distress and disability may persist for years” (Ott, Lueger, Kelber, & Prigerson, 2007, p. 332). Bennett (1998) identified that the impact of spousal bereavement on both mental and physical health is greater among men than among women, especially for older men.

Differences in gender, age, and cultural background can affect how a person responds to stress, such as bereavement, and changes in health (Reynolds, 2005; Stroebe & Schut, 1999).
Interventions to decrease negative health deficits related to bereavement need to be tailored for individuals and cultural groups, including age and gender as important factors (Fang et al., 2012; Hsu et al., 2004; Stroebe & Schut, 1999).

A bereaved spouse’s health related quality of life (HRQOL) may be used as an indicator of health outcomes (Chen, Li, & Kochen, 2005). HRQOL is considered sensitive to culture and social factors affecting health. Understanding individual and population HRQOL can be useful in developing health promoting interventions that are both culturally relevant and effective in modifying factors that negatively affect bereaved spouses (Fry, 2001). However, few studies of spousal bereavement consider HRQOL or the cultural variations in response to widowhood. The health impact of spousal bereavement on HRQOL and the need for cultural information to develop informed interventions makes these important public health concerns.

HRQOL measures have been increasingly used to monitor health outcomes, determine the effect of medical interventions on quality of life, and evaluate the outcome of health care service in the fields of clinical practice, clinical trials, public health care, risk prediction, disease management, and health care research since the early 1990s (Chang et al., 2012; Chen et al., 2005; Guillemin, Bombardier, & Beaton, 1993). As Chen et al. (2005) noted, “health is an important determinant of a person’s quality of life…” (p. 936), likewise, quality of life is important to health. Bereavement threatens both.

The terms HRQOL and quality of life (QOL) are often used interchangeably (Chen et al.,
The World Health Organizations (WHO) defines QOL as an “individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns” (WHOQOL, 1995, p. 1405). The WHO defines health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO, 1946). Chen et al. (2005) discussed the WHO use of these concepts saying: “HRQOL is a concept that tried to embrace the spirit of the WHO definition of health (including physical, emotional, and social well being) (WHO, 1948) by including both personal health status and social well being when assessing health” (p. 936-937). The WHO definition of QOL is multidimensional and consists of four domains: (a) physical health, (b) psychological health, (c) social relationships, and (d) environmental influences (WHOQOL, 1998). The WHO definition of QOL and the WHOQOL questionnaire that operationalizes QOL were used in study. Following these definitions, evaluation of health and the effects of health care must include not only illness, but also well-being which can be measured by assessing quality of life using WHOQOL instrument (WHO, 1997).

In Taiwan, although a number of studies have assessed HRQOL among older adults living in urban areas, rural areas, institutions, and those who receive day care service (Yu et al., 2012), no research has investigated older widowers’ HRQOL as a health outcome, or in response to bereavement. Without this type of holistic health assessment, a significant part of
older widowers’ health status and health-related needs remains unknown and suitable nursing care and the development of interventions are hindered. There is a need to explore older widowers’ HRQOL in bereavement to advance nursing science and to provide effective nursing care. The findings of this study provide the basis for developing and testing the effectiveness of interventions for older widowers in Taiwan.

**Statement of the Problem**

Bereavement is defined as the objective situation one faces after experiencing loss of an important person through death (National Cancer Institute, 2009). The loss of a spouse is referred to as widowhood. Widowhood is defined as the state, or period, of being a widow (woman) or widower (man) (Widowhood, 2012) and the term may be used for both genders (Bennett, Smith, & Hughes, 2005; Elwert & Christakis, 2008).

For most married older adults, spousal bereavement is unavoidable and extremely stressful resulting in various levels of grief and distress (Chen et al., 1999). The impact of becoming widowed is multidimensional, affecting physical, psychological, and social aspects of life (Shih, Turale, Shih, & Tsai, 2010; Joanna Briggs Institute, 2006). When spousal bereavement occurs in later life, the impact can be especially detrimental to one’s health (Caserta & Lund, 1992; Goldman, Koreman, & Weinstein, 1995). Several studies reported that older widowers experienced a decline in mental and physical health, morale, social engagement, instrumental activities of daily living (IADL), disabilities, mobility, and
mortality (Bennett, 1998; Bowling & Windsor, 1995; van den Brink et al., 2004).

Women typically have longer life expectancies than men, resulting in more widows in many countries. Likewise, there are more studies of widows than studies of widowers (Bennett, 1998; Brabant, Forsyth, & Melancon, 1992; Daggett, 2002; Lin, 2002; Stroebe & Schut, 1999). Despite this emphasis, evidence from Europe demonstrates a significant effect of widowhood on disability and life expectancy in older men (van den Brink et al., 2004).

Age, gender and other cultural factors affect how grief is experienced (Stroebe, Hansson, Schut, Stroebe, & Van den Blink, 2008). Therefore, culturally relevant bereavement care within different health and social care environments is critical (Joanna Briggs Institute, 2006). Research to develop such care among older widowers in various social and cultural contexts, such as Taiwan, addresses an important public health concern.

While spousal bereavement studies have been conducted in Western countries for several decades, primarily among women (Levang, 1998; Lund, Caserta, & Dimond, 1986; Parkes, 1964; Parkes, 1972; van den Brink et al., 2004), studies conducted in Taiwan, with either men or women, are limited. In Taiwan, a unique research challenge is the cultural taboo of discussing death (Lin, 2002; Taiwanese Customs, 2012). For example, the strength of this taboo is so strong that even the use of the number “4” is avoided as the pronunciation differs only in tone from the pronunciation of “death” in Taiwanese and Mandarin (Purnell & Paulanka, 2008). Furthermore, for some Taiwanese, bereaved persons are forbidden from
visiting other people’s home, from participating in ceremonies, such as weddings, or from worshiping in temples since bereaved individuals are traditionally characterized by misfortune or even as “not clean” (The end of life, n.d.). Such customs could lead to widowed older adults having more difficulty accessing social support. The purpose of this study was to assess the HRQOL and health-related needs of widowed men 60 years and older living in Taiwan. The findings will ultimately lead to the development of culturally relevant interventions to mitigate the effects of decreased quality of life and poor health outcomes.

**Background and Significance**

In Taiwan, there were 2.69 million people aged 65 years and older in late 2013, accounting for 11.5% of the total population (Department of Statistics, Ministry of the Interior, Republic of China, 2014a). The United Nations (2002) also reported that world population aging is growing at an unprecedented rate; it is pervasive, enduring, and has profound implications for many facets of human life. In Taiwan, 47.0% of older women and 14.3% of older men aged 65 years and over were widowed in late 2013 (Department of Statistics, Ministry of the Interior, Republic of China, 2014b). The percentage of older widowers represents approximately 1.26 million men in Taiwan (Department of Statistics, Ministry of the Interior, Republic of China, 2014b). The growth in the widower population may lead to higher demands on family care and professional care (van den Brink et al., 2004). The increased health-related needs of older widowers in Taiwan remain unexplored in the
research literature. Nurses, as first line health care providers in many settings from acute care to the community, have more opportunities to interact with widowed older adults than other members of the health care team. A nursing science perspective and research of the HRQOL among older widowers in Taiwan is important to improve health care.

Traditional indicators of health, e.g., mortality rates and clinical parameters, insufficiently evaluate HRQOL and health outcomes (Chen et al., 2005). Changing perspectives on health focusing not only on when people die, but how they live “has called for a paradigm shift in how we should evaluate outcomes of illness and care” (Chen et al., 2005, p. 936). Health care providers and researchers are more likely to use both length of survival and HRQOL to evaluate the effectiveness of treatment interventions (Yao et al., 2002). The addition of HRQOL recognizes the significance that the nature of life, not just length of life, as an indicator of health status.

Although spousal bereavement is not an illness, bereaved individuals have increased health care utilization for both physical and mental problems (Charlton et al., 2001; Parkes, 1964). Early in 1985, Hogstel argued that older widowers are “a small group with special needs” and that “widowers are often lonelier and more depressed than widows” (p. 24) because “older men tend not to talk about suicide but to act” (Hogstel, 1985, p. 26). Hogstel (1985) called on all nurses to be more sensitive to the special needs of older widowers in various settings such as in homes, clinics, hospitals, nursing homes, and in adult day care and
senior centers. This study reflects the call for nurses to be alert to the special needs of older widowers by exploring older widowers’ HRQOL and health-related needs. The study is a beginning step for future development of effective, culturally relevant nursing interventions to maintain or promote quality of life.

**Statement of the Purpose**

The purpose of this study was to explore the HRQOL of widowed men age 60 years and older who live in Taiwan. In four decades of published research on the experience and care of widowed persons in Western cultures, limited studies have been conducted in Eastern cultures, such as Taiwan. Furthermore, there is limited international research on older widowers. Research on the quality of life for older widowers in Taiwan will provide knowledge for nursing and other disciplines to facilitate the design and testing of interventions that will promote health and well-being of older widowers in Taiwan.

**Specific Aims**

In order to develop culturally relevant interventions to support and care for Taiwanese widowed older men, a comprehensive assessment of widowers’ HRQOL and health-related needs is required. Therefore, the four specific aims for this study were to:

1. Describe the demographic characteristics and the HRQOL of widowers 60 years of age and older living in Taiwan.
2. Identify related demographic variables associated with HRQOL of the target population.
3. Identify statistically significant demographic predictors of the HRQOL among older widowers in Taiwan.

4. Identify health-related needs of older widowed men in Taiwan.

Summary

There are fewer widowers than widows, yet the HRQOL and health-related needs of older widowers are not well understood. In Western societies, researchers have found that widowers are at an increased risk for mortality and more likely to experience depression than widows (Bennett, 1998; Bennett et al., 2005; Bowling & Windsor, 1995; Elwert, 2006; van den Brink et al., 2004). In Taiwan, cultural context and historical background may increase the difficulties encountered in the process of bereavement. Exploring the HRQOL of older widowers in Taiwan facilitates identifying health-related needs and development of effective culturally relevant interventions. This study explored and described the HRQOL of older widowers in Taiwan. The findings advance nursing knowledge by providing fundamental knowledge for future research that will ultimately develop and test effective culturally relevant interventions to promote the quality of life among older widowers in Taiwan.
CHAPTER TWO

REVIEW OF THE LITERATURE

This chapter reviews the literature addressing widowed older men and their health-related quality of life (HRQOL) as well as the study’s theoretical framework. The content addresses the following areas: (a) Historical Overview of Spousal Bereavement, (b) Widowed Older Adults, (c) Older Widowers, (d) Spousal Bereavement in Taiwan, (e) Quality of Life (QOL), and (f) Theoretical Framework. Each section is categorized into subsections according to the chronology, characteristics, and cultural contexts of the problem.

Historical Overview of Spousal Bereavement

Studying the needs of widowed persons and the impact of spousal bereavement is not new in Europe, North America and Australia. One of the first research studies conducted on spousal bereavement was done in 1964 (Parkes, 1964). Conducted in the United Kingdom (U.K.), the study reviewed 44 widows’ medical records (before and after spousal bereavement) and found an increase in the rate of physician visits for both psychiatric and non-psychiatric symptoms after spousal bereavement (Parkes, 1964). The study suggested that grief commonly causes the widow to seek help from her general practitioner (Parkes, 1964). Since that study, other studies have been done related to various aspects of being a widow(er) and spousal bereavement. Topics typically addressed are higher mortality and/or morbidity rate (Moon, Kondo, Glymour, & Subramanian, 2011; Skulason, Jonsdottir,
Sigurdardottir, & Helgason, 2012; Shor et al., 2012); increased physical and psychological problems, including grief (Charlton, Sheahan, Smith, & Campbell, 2001; O’Connor, 2010; Schoevers et al., 2006); and issues related to coping and adjustment (Ha, 2010; Lund, Caser, Utz, & De Vries, 2010).

**Widowed Older Adults**

In 2010, more than 14 million people in the United States were widowed; nearly 76% of the widowed were older adults aged 65 years and over (U.S. Census Bureau, 2012). Carr, Wortman, and Nesse (2006) argued that “late life widowhood is the most common form of spousal loss, yet most … [research related to] bereavement do(es) not take into consideration the special risk factors and resources of the elderly” (p. 5).

**Definition.** The definition of “older” varies according to different cultural contexts and people’s life expectancy. Many developed countries, such as the United States and Taiwan, refer to “older person” or “elderly person” as aged 65 years or older (Ministry of the Interior, 2012; U.S. Census Bureau, 2012a); the United Nations defined “older population” as people age 60 years or older (WHO, 2012). Many researchers who studied spousal bereavement among older adults recruited participants aged 65 years and older (Ha, 2010; Schoevers, et al., 2006; Noël-Miller, 2010; Stimpson, Kuo, Ray, Raji, & Peek, 2007; Williams et al., 2011); or aged 60 years and older (Grundy & Tomassini, 2010; Krochalk, Li, & Chi, 2008; Richardson, 2010). Even though the Taiwan government defines senior citizens as age 65 years or older
(Ministry of Interior, Taiwan, 2009), in Taiwanese culture the 60th birthday is traditionally celebrated as a milestone representing entrance into late adulthood. The sample population in this study was defined using the traditional definition of men 60 years or older who lost their spouse by death.

Since most spousal bereavement occurs in late life, older adults form the majority of the widowed population. According to Federal Interagency Forum on Aging-Related Statistics (2012), marital status is a key factor in well-being among older adults since it may affect living arrangements and availability of caregivers for older Americans with an illness or disability. Chronic conditions also affect well-being and about 80% of older adults have one chronic condition and 50% have at least two (Centers for Disease Control and Prevention, 2011). Older adults are likely to experience a loss of well-being from both a chronic condition(s) and a spousal loss.

Older Widowers

**Lack of research.** A number of bereavement scholars have noted that few researchers have studied widowers as a separate group although many have compared gender differences in bereavement studies (Brabant, Forsyth, & Melancon, 1992; Daggett, 2002; Joanna Briggs Institute, 2006). The Joanna Briggs Institute (2006) study argued that “the majority of the studies on spousal bereavement had a strong bias toward widows” (p. 69). Therefore, assumptions regarding spousal bereavement among older widowers are generated from
studies and reports that include widowed women (Möller, Björkenstam, Ljung, & Yngwe, 2011; van den Berg et al., 2011; Williams et al., 2011) or widowers younger than 65 (Daggett, 2002; Moon et al., 2011; Skulason et al., 2012). Studies that focused on both genders of various ages revealed that spousal bereavement resulted in: (a) negative psychological impact on the widow(er)s (Bennett, Smith, & Hughes, 2005; Ha, 2010; Möller et al., 2011; O’Connor, 2010; Schoevers et al., 2006), (b) higher mortality and morbidity rates (Bowling, 2009; Grundy & Tomassini, 2010; Möller et al., 2011; Williams et al., 2011), and (c) adverse health outcomes that can lead to institutionalization (Nihtila, & Martikainen, 2008; van den Berg, Lindeboom, & Portrait, 2011).

**Psychological impact.** Depressive symptoms and other psychiatric conditions commonly occur among bereaved spouses (Bennett et al., 2005; Möller et al, 2011; O’Connor, 2010; Schoevers et al., 2006). Only two studies addressed psychological conditions focusing on older widowers following bereavement. These found that suicidal ideation or actions remained as high at 13 months as they did at six weeks following bereavement even though depressive symptoms had decreased (Byrne & Raphael, 1997; Byrne, & Raphael, 1999).

An Australian study (Byrne & Raphael, 1997) found that older widowers reported more anxiety and general psychological distress than married men over a 13-month period following spousal bereavement. The study reported the level of anxiety was strongly associated with intensity of grief, but not with age, income, education, occupational prestige,
cognitive function, duration of wife’s final disease, or expectedness of wife’s death.

Additionally, older widowers reported more sleep disturbance and thoughts of death and suicide than married men. Another publication by Byrne and Raphael (1999) of the same study discussed the prevalence of depressive symptoms and major depressive episodes (MDEs) in widowed older men at 6 weeks (T1) and 13 months (T2) following bereavement. The results showed the prevalence of MDEs decreased with time, but suicidal thoughts or actions stayed the same or increased with time. The research findings suggested that the clinical course of MDEs should be closely monitored and clinical assessments should include a routine inquiry on suicidal ideation for recently bereaved older men (Byrne, & Raphael, 1999). Other studies have confirmed that the majority of adults aged 65 and older who committed suicide were widowed and the risk of suicide for older widowed persons statistically significantly increased during the first year following spousal bereavement. For instance, among adults 80 years and over only a small number (men--18%, women--6%) were recently widowed. Among these, men “seem to suffer more from the loss and need a longer time to recover than women” (Erlangsen, Jeune, Bille-Brahe, & Vaupel, 2004, p. 378).

**Mortality.** As a result of the psychological impact of widowhood on the older widower, mortality is notably higher than in other population groups (Bowling, 2009; Grundy & Tomassini, 2010; Möller et al., 2011; Moon et al., 2011; Shor et al., 2012; Williams et al., 2011). The risk of death for a widow is highest within the first two years of widowhood.
(Stimpson et al., 2007) and the increased risk can last for between 2.5 to 9 years following spousal bereavement (Skulason et al., 2012; van den Berg, Lindeboom, & Portrait, 2011). In addition, researchers have reported that elevated mortality is statistically significantly different according to gender (Bowling, 2009; Reynolds, 2005; Stimpson et al., 2007; Subramanian et al., 2008), age (Bowling, 2009), ethnicity (Elwert & Christakis, 2006), and duration of bereavement (Stimpson et al., 2007). Related to gender, several studies suggest that increased mortality within the first year and beyond was significantly higher for widowers than widows (Bowling, 2009; Moon et al., 2011; Stimpson et al., 2007; Subramanian et al., 2008). One study compared ethnicity in widowhood and found that among older American couples, whites are more likely to die soon after spousal death than blacks (Elwert and Christakis, 2006).

In the past few decades, only two studies addressed mortality among older widowers (Niemi, 1979; Stimpson, Kuo, Ray, Raji, & Peek, 2007). Niemi (1979) investigated the effect of spousal bereavement on mortality among older men in Finland and found increased mortality rates during the first six months following bereavement. Stimpson, Kuo, Ray, Raji, and Peek (2007) found that widowhood was a risk factor for mortality among older Mexican American men, and that the risk of death associated with widowhood was highest within the first two years. However, no causal evidence between mortality and widowhood has been verified in the literature.
Effects on general health. Studies have also found spousal bereavement influenced the incidence and severity of chronic conditions such as arthritis and diabetes (van den Berg, Lindeboom, & Portrait, 2011). The effect is strongest in the first few years, yet can last up to 10 years, following bereavement (van den Berg et al., 2011). Furthermore, an illness initially not considered life-threatening could, as a result of becoming widowed, increase the risk of life-threatening illness in later life and lead to late-in-life mortality (van den Berg et al., 2011). These changes in health can lead to institutionalization in long-term care facilities (van den Berg et al., 2011). One study found that the risk of entering long-term institutional care following spousal death among older Finnish widows and widowers is highest during the first month following the death of a spouse (Nihtila & Martikainen, 2008). In the United States, a study found that the effects of spousal loss and lack of adult children’s availability as caregivers doubled the risk for nursing home placement for men, but not for women (Noël-Miller, 2010).

Unique challenges of older widowers. In addition to normal challenges related to aging, older widowers encounter unique challenges following spousal bereavement, such as changes in their social function (Bennett, 1998); alterations in instrumental activities of daily living (Hogstel, 1985); and less successful coping strategies to manage daily life (Reynolds, 2005). Despite these documented challenges few studies have attended to this population (Joanna Briggs Institute, 2006). The following sections introduce and discuss significant research
related to the unique challenges of older widowers.

**Challenges in social functioning.** Death of a spouse dramatically impacts social function among older men during bereavement (Balaswamy, Richardson, & Price, 2004; Bennett, 1998; Hogstel, 1985; Stelle & Uchida, 2004; van den Hoonaard, 2009). Hogstel (1985), a nurse working with numerous older widowers at a community retirement center, reported what she learned from these widowed older men. Hodstel identified widower’s difficulty maintaining social contact, feeling lonelier and more depressed than widows, and having an unmet need for touch. Because the wife often arranges men’s social activities, they often become dependent on her to do so. A study conducted in the U.K. supported Hogstel’s report and revealed that older widowers’ mental health, morale, and social engagement significantly declined within four years following bereavement (Bennett, 1998). A report using research data collected during 1987 to 1993 in the United States, indicated that older widowers had negative mean values on assessment of their adult children’s support; received lower levels of positive support from friends and relatives in all measures; and had significantly different social support network from widows (Stelle & Uchida, 2004). Another study compared data between widowers in early bereavement (bereaved less than 500 days) and those in late bereavement (bereaved longer than 500 days) (Balaswamy et al., 2004). Results showed that widowers in late bereavement receive more social support in instrumental and emotional aspects from various resources including family, friends, and
neighbors than those in early bereavement; and that in early bereavement, there was more social participation in church activities, but less or no support if depression occurred.

Above all, the literature indicates the importance of social support for older widowers as well as the need for research studying widowed men as a unique sub-group.

**Challenges to independence.** Spousal bereavement is often associated with negative outcomes and consequently creates a need for assistance in fundamental and instrumental activities of daily living among older widowers (Balaswamy et al., 2004; Hogstel, 1985; Van den Brink et al, 2004). Hogstel (1985) identified that older widowers frequently encounter challenges of completing household tasks (such as cooking and housekeeping) formerly done by their mothers and wives. A cross-national European study suggests that spousal bereavement is a risk factor for dependency in instrumental activities of daily living (IADLs) and mobility for older men living in Finland, Netherlands, and Italy (van den Brink et al., 2004).

In the United States, older widowers expect to be treated as individuals and desire independence while restructuring their lives to meet their needs (O’Hearn Pepin, 2010). Older widowers attempted to represent themselves as masculine during interviews by utilizing strategies such as taking charge of the interview and interrupting the interviewer during the interview conversation (van den Hoonoard, 2009, p. 257). There may be a balance for widowers between the need to learn instrumental activities of daily living that were once the
domain of the wife and the desire to be independent and in charge of his life.

In summary, the literature describes challenges faced by older widowers impacting their psychological and general health, mortality and morbidity, and major changes in social function and activities of daily living. Yet, having been independent and the main bread-winner, older widowed men desire to be independent though they may need assistance following spousal bereavement. Older widowed men may struggle reaching out and asking for help. The research demonstrates a need to be aware of older widowers’ desire of being treated as an independent individual while identifying the older widowed men’s needs following the death of their spouse.

**Spousal Bereavement in Taiwan**

Similar to research in other countries the focus of research on widowhood in Taiwan has been primarily with widows. Findings about both widows and widowers included Taiwanese cultural factors, women’s grief reactions, resilience, coping, meaning and experience of spousal bereavement (Lin, 2002; Tsai, 2001; Tsao, 2005; Wang, 1998; Wang, 2011; Wu, 2009).

**Bereavement in Taiwan.** Twenty-four studies have been published about bereavement among Taiwanese older adults. A search of the National Digital Library of Theses and Dissertations (NDLDT) in Taiwan produced 20 studies conducted by graduate students in Taiwan on bereaved older adults. Ten of the 20 graduate student studies addressed only
women, nine included both men and women, and only one focused specifically on older men.

Of these, none addressed HRQOL or health-related needs and none were from a nursing 
discipline. In addition to the graduate student studies, four studies conducted with bereaved 
older adults were published. This section of the literature review reports on the ten theses or 
dissertations and the four published articles that included Taiwanese men.

Consistent with findings in Western research, spousal bereavement significantly affects 
the physical, mental, and social function among community dwelling older adults in Taiwan 
(Chiu, Hsieh, & Chen, 1998). Elevated mortality rates following spousal bereavement are 
found among widowers and widows, and are higher for men than for women (Chang, 2010; 
Chen, Tseng, Wu, Lee, & Chen, 2007; Fang et al., 2012) as are depressive symptoms and 
loneliness (Li, 2011; Shih, 2008; Wang, 2010). A 14-year follow-up study among 2,453 
elderly found that widowhood was positively related to mortality for both men and women in 
Taiwan (Chen, Tseng, Wu, Lee, & Chen, 2007). Between 1994 and 2010, suicide rates were 
highest for those aged 65+ years among all age groups, and higher for males than for females 
(Department of Health, Executive Yuan, R.O.C, Taiwan, 2012). Older adults who experience 
spousal bereavement and live alone are at high-risk for suicide (Huashan Social Welfare 
Foundation, 2010). Gender differences were identified in widowhood among community 
dwelling elders in Taiwan, therefore, gender-tailored interventions are recommended for 
improving bereaved older adults’ health (Fang et al., 2012). Similar to Western culture, there
may be a decline in instrumental activities of daily living (IADL) following spousal bereavement among men, but not for women (Shiue, 2012; van den Brink et al., 2004).

Findings regarding depressive symptoms in widowhood vary. Wang (2010) indicated that among middle aged and older adults, depressive symptoms were stronger within six months post spousal bereavement and associated with negative family interactions and relationships. Li (2011) suggested depressive symptoms were most prominent after six months and up to 24 months. In addition, these symptoms were stronger for women than for men.

Among bereaved older adults who live alone, women were more likely to report stress associated with spousal loss than men who thought they were strong enough to cope with the loss of their spouse (Chen, 2010). For both men and women, the ongoing support of significant family members helped ease the older adults’ mind following spousal bereavement (Chen, 2010). Low levels of loneliness among older widowers and widows were significantly related to education level, living arrangements, and perceived health status (Shih, 2008). Shih (2008) concluded that a possible sampling bias may have affected results, since most participants were from senior activity centers.

**Significant Taiwanese studies of older widows and widowers.** Two of the earliest Taiwanese studies on spousal bereavement investigated physical and mental health and social function among community dwelling widows and widowers (Chiu et al., 1998) and,
specifically, the psychological adjustment among Hakka (ethnic subgroup) farm widows and widowers (Su, 1996). Hakka is the second large ethnic group in Taiwan representing 13.6% the population (Hakka Affairs Council, Taiwan, 2011). Comparing the reactions of 9 Hakka men and 11 women to recent spousal bereavement, Hakka widowers had higher feelings of guilt (44% for men, 9% for women); feelings of loneliness (100% for men, 82% for women); and poorer appetites (89% for men, 55% for women) (Su, 1996). More than half of the men (56%) tried to solve bereavement related problems by themselves compared to 27% of women (Su, 1996). However, the report did not indicate why the men felt guilt or what kinds of problems they tried to solve. Chiu, Hsieh, and Chen (1998) examined the effect of widowhood on physical, mental and social functioning among community dwelling older adults using repeated measures at three time points in 1994, 1995 and 1997. They found that among older community dwelling bereaved men and women, declines in perceived health status and increases in loneliness were reported only during the first year of bereavement. Compared to non-bereaved community dwelling older adults, bereaved older adults reported significantly worse mental health and higher degrees of loneliness in the first year of bereavement. However, only loneliness lasted up to 3 years post spousal bereavement (Chiu et al., 1998).

Dissertation research studies with older bereaved men used qualitative narrative life course review methodology (Cheng, 2010). Seven women and seven men were interviewed
generating seven strategies that were used in adjusting to being a widow(er): (a) dreaming, (b) not remarrying, (c) staying healthy, (d) caring for self, (e) psychological adjusting, (f) developing interests, and (g) using will to overcome obstacles (Cheng, 2010). However, it was not clear whether these strategies were all utilized, and if by both genders. One strategy discussed, not remarrying, was consistent with another Taiwanese study that found older widowed women showing strong loyalties to their deceased husbands (Yong, 2005). However, Chang found that older widowed men are interested in remarriage (Chang, 2012).

In summary, older bereaved men in Taiwan face many of the same challenges found in the experience of widowhood as men in the rest of the world. Studies conducted in Taiwan added to the literature by finding four unique psychosocial risk factors for Taiwanese widowers: (a) sleeping disturbances, (b) poorer appetites that might negatively impact physical health, (c) persistent feelings of loneliness, and (d) guilt. The research in Taiwan provides fundamental knowledge of bereaved older adults as well as differences between widowers and widows. However, the studies conducted in Taiwan are few in number and may not fully represent the experience of being a widow(er).

**Social-cultural context.** Culture is defined as “the totality of socially transmitted behavioral patterns, arts, beliefs, values, customs, life-ways, and all other products of human work and thought characteristics of a population of people that guide their worldview and decision making” (Purnell & Paulanka, 2008, p. 5). Death and how people react to it is
considered largely culturally constructed. Cultural considerations about death in Taiwan include the offensiveness of mentioning death. According to Tanya (2009) Taiwanese people don’t like to hear or talk about death. Even the number “four” is avoided and considered unlucky because the Taiwanese and Mandarin pronunciation of the number four is similar to the word death. Because of social and cultural taboos and practices, widow(er)s in Taiwan experience unique stresses, such as living arrangements, relationships with adult children, and the role of fate (Hsu, Kahn, & Hsu, 2002; Wang, 1998). These cultural beliefs and practices are distinctly different from the experiences of widows in Western countries (Hsu, Kahn, Yee, & Lee, 2004; Shih, Turale, Shih, & Tsai, 2010). In traditional social cultural beliefs of older adults co-residing with adult children is a valued and expected living arrangement. In the study with Hakka widowers, only one man lived alone (11%) and nine men (89%) lived with adult children and grandchildren with a rotating schedule. Most participants in the study had a negative perceptions about assisted-living facilities and none of them were willing to move to one (Su, 1996). The dislike for assisted living facilities was so great that one Hakka widower living with his daughter and son-in-law was willing to remain living with his daughter even though he had frequent problems with his son-in-law (Su, 1996).

Filial piety is a core value of Confucianism and is a traditional cultural norm in Taiwan. The implementation of filial piety by adult children is considered a significant buffer to the impacts following spousal bereavement among Taiwanese older widow(er)s. Sun (2003)
investigated the function of intergenerational exchanges among urban widowed older men and women. Findings indicated that the resulting emotional codependence and support was a common preference among older bereaved men and women in Taiwan (Sun, 2003). Among older widows and widowers, children were the most important and irreplaceable source for feelings of security and attachment following spousal bereavement (Sun, 2003). While participants still held firmly to the concept of filial piety, which views children’s support of parents as a natural responsibility and obligation, older widowers and widows did not expect, or ask, their children to provide for their financial support (Sun, 2003).

Another strongly held social cultural belief held among older bereaved men and women in Taiwan is that spousal bereavement is fate (Chang, 2012). The belief of widowhood as fate may prohibit bereaved spouses from acknowledging their problems and seeking family or outside help in adjusting to spousal bereavement (Chang, 2012).

**Older widowers in Taiwan.** Although some studies conducted in Taiwan included men as part of the sample of widowed older adult research (Chen et al., 2007; Chiu et al., 1998; Fang et al., 2012; Su, 1996), only one study investigated the experience of spousal bereavement among older widowers as a separate group. Sun (2009) conducted a qualitative narrative study to explore the experience of spousal bereavement among older widowers. Sun utilized sand tray as a media to facilitate three older widowers illustrating their experiences of spousal bereavement while conducting in-depth interviews. The experience of spousal
bereavement was discussed in four parts: (a) reactions to spousal bereavement, (b) coping strategies, (c) interpretation of the life event—spousal bereavement, and (d) the meaning of widowed life. Sun (2009) found older widowers’ reactions to spousal bereavement displayed cognitive, emotional, behavioral, and physical aspects. Cognitive reactions included questioning (e.g. “How can it be?” and “How am I supposed to live alone?”) and accepting (e.g. “Everything is arranged.” and “People all die.”). Emotional reactions included sadness, loneliness, anger, worry, and mourning. Behavioral reactions included crying, restlessness, silence, demoralization, and dreaming. Among physical reactions, insomnia, headache, chest tightness, and weight loss were common and often occurred together. Coping strategies older widowers utilized to adjust to widowhood included “cognition” (e.g. accepting, or, it is what it is) and “taking action” (e.g. participating in activities or volunteering). Finding social support from relatives and the community neighborhood was important. Additionally, ritual was applied to maintain the emotional connection with deceased wife. For example, an older widower burned incense to his wife and reported his daily life to her each day. Positive meanings and negative meanings were found in older widowers’ interpretation of the life event, spousal bereavement. Negative meanings resulted from difficulties encountered by older widowers, such as not being able to cook their food. Positive meanings were more slowly formed when they realized their ability to learn and do things on their own.

Sun (2009) stated that older widowers demonstrated the meaning of being widowed in
several ways. Hopes for their children’s success and achievement were common. Older widowers hoped they would have a good family life without worrying about their children. Being proud of their children’s success was important to forming meaning in widowed life. Other ways to make meaning included volunteering and service to community, changing the focus of affections from their lost spouse to others, e.g. new partner or children, maintaining the honor and achievements they had gained in the past by passing on property and lessons to their children, and tolerating the bitterness of widowhood.

Spousal bereavement has a great impact on mental and physical health, including social engagement, disability, mobility, and mortality among older widowers during widowhood in Western societies. Most studies in Taiwan focused on negative descriptions and outcomes of widowhood and addressed psychosocial or medical approaches examining resilience, grief reactions, coping, experiences of spousal bereavement, and mortality rates following spousal death (Chang & Lin, 2001; Chu & Chow, 2008; Huang, 2002; Lu & Lin, 2002; Tsu, 2000; Wu, Hou, & Hsu, 2004). Overall health outcomes of older widowers and their specific health related needs have not been identified in the literature for Taiwanese older men. Healthcare professionals need to clarify and meet the unique health related needs of this particular population with effective interventions. In order to provide individualized quality care for the bereaved older adult, healthcare providers need more information about the best ways to accomplish this task. However, little research has been conducted to provide the knowledge
to understand the needs of older bereaved spouses and to develop interventions to address those needs. This study investigated the health-related quality of life (HRQOL) and its predictors, as well as identifying special needs of older widowed men in Taiwan.

**Quality of Life (QOL)**

The literature presents no unified definition for the term quality of life (QOL). Since the 1970s, QOL has been highlighted in social research studies as an important social indicator of an individual’s life (Andrews & Withey, 1974, 1976; Campbell, Converse, & Rodgers, 1976). At the same time, health science disciplines, including nursing, began to adopt the concept of QOL to evaluate health care outcomes of older adults (Chisholm, 1977; Cronje, 1978; Dent, 1977; Elwood, 1972; Packer, 1979), and to assess the impact of chronic illness (e.g. stroke) and medical intervention (e.g. hemodialysis) (Atcherson, 1978; Lawrence & Christie, 1979; Wilkes, 1977) on an individual’s life. QOL was seen as important because it measured not only physical conditions but also psychological, social and environmental dimensions. In 1980s, the application of QOL measures by health care providers and researchers dramatically increased, particularly in evaluating surgical intervention outcomes such as vital organ transplantation (Lough, 1986; Packa, 1989; Walden et al., 1989) and chronic illness impact on health outcomes (Burckhardt, 1985; Traver, 1988).

In the late 1980s, oncology nursing recognized the diverse impact of cancer and treatment on patients’ daily life and integrated QOL assessment as an important nursing care
outcome to measure a broad array of impacts (Curtis & Fernsler, 1989; Ferrell, Wisdom, Wenzl, & Brown, 1989; Graham & Longman, 1987; Monahan, 1988). QOL has been shown to be correlated with interventions and subsequent health outcomes in many conditions (Maldeven, Mets, & Gorus, 2013). Hence, QOL measurements have been increasingly utilized by nurses to evaluate nursing interventions for populations across all ages with various health issues or physical/psychological functioning impairments (Engelke, Guttu, Warren, & Swanson, 2008; Gräske, Fischer, Kuhlme, & Wolf-Ostermann, 2012; Raphael et al., 1997; Sallee, Ambrosini, Lopez, Shi, & Michaels, 2004).

**QOL and Older Adults**

Among older adults, QOL in nursing has been assessed in long-term care facilities (Cooney, Murphy, & O'Shea, 2009; Drageset, Eide, & Ranhoff, 2012; Hutchison, 2012), older adults with dementia and/or their caregivers (Kuzu et al., 2005; Moyle, Murfield, Griffiths, & Venturato, 2012; Phillips, Reid-Arndt, & Pak, 2010), recipients of medical/surgical interventions (Franzén, Saveman, & Blomqvist, 2007; Montin, Suominen, Katajisto, Lepist, & Leino-Kilpi, 2009), and cancer survivorship (Beck, Towsley, Caserta, Lindau, & Dudley, 2009; Roiland & Heidrich, 2011). The literature implies that older adults are likely to encounter physical and psychological problems and that nurses need to be aware of QOL measures among these older adults. However, no nursing research studies have addressed older widowers’ QOL even though the literature has suggested that older widowers
are at higher risk of psychosocial and physical health problems as well as higher mortality rates.

**World Health Organization Quality of Life Project**

The World Health Organization (WHO) initiated a Quality of Life project (WHOQOL) in 1991 and aimed to develop an international cross-culturally comparable instrument to assess quality of life. The instrument assessed the individuals’ perceived quality of life in the context of their culture and value systems (World Health Organization, 2012). The United States Centers for Disease Control and Prevention [U.S. CDC] (2011a) argued the importance of QOL and stated that, as health science advanced, researchers who measured health outcomes should also QOL. Population health was undertaken not only to save lives, but also to improve people’s quality of life (U.S. CDC, 2011a). Accordingly, when assessing older widowers’ health outcomes, health care providers should consider not only the mortality, but also the health-related quality of life (HRQOL).

WHO (1995) defined quality of life as “individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns” (p. 1405). The U.S. CDC (2011a) described quality of life (QOL) as “a broad multidimensional concept that usually includes subjective evaluations of both positive and negative aspects of life” (para. 3). The U.S. CDC (2011a) stated that although health is one of the important domains of overall quality of live, the concept of
overall QOL included other domains such as jobs, housing, schools, and neighborhood. Furthermore, culture, values, and spirituality were also considered key aspects of overall quality of life. In the late 1980s, health science disciplines started to use health-related quality of life (HRQOL) to specifically indicate QOL focused on health-related domains such as physical, mental, functional, social and spiritual components (Kaplan, 1988).

**Health-related quality of life (HRQOL).** Haberman and Bush (2003) described HRQOL as a collective phenomenon representing many intertwining facets of life. The U.S. CDC (2011b) used the following description of HRQOL: “On the individual level, this includes physical and mental health perceptions and their correlates—including health risks and conditions, functional status, social support, and socioeconomic status” (para. 5). Since the 1990s, health care providers and researchers have increasingly applied the concept of HRQOL to measure intervention outcomes among patients and inform patient management (Guillemin, Bonnardier, & Beaton, 1993; Jokinen, Hippeläinen, Turpeinen, Pitkänen, & Hartikainen, 2010). Various randomized controlled trials (RCTs) have incorporated the HRQOL assessment to evaluate intervention outcomes in order to assist making treatment decisions (Claassens et al., 2011; Kelley, Kelley, Hootman, & Jones, 2009). In addition to generic HRQOL questionnaires, disease-specific and cancer-specific HRQOL instruments have been developed in order to sensitively assess specific health outcomes of populations with a variety of diagnoses (Haberman & Bush, 2003; Raggi, Leonardi, Bussone, & D'Amico,
For the past two decades in Western countries, HRQOL researchers have assessed HRQOL among various populations and found that education is positively associated with HRQOL among older adults receiving primary care service (Chapman, Duberstein, & Lyness, 2007). Additionally, among older adults with heart failure, men have better physical functioning (Friedman, 2003) and score higher in emotional subscales (Hou et al., 2004) than women. Rural community-dwelling older adults aged 75 years and older, with no high school diploma, unemployed, and with low incomes appeared to have lowest HRQOL (Borders, Aday, & Xu, 2004).

In Taiwan, similar to Western countries, a positive relationship was found between education level and HRQOL among community-dwelling older adults (Sun, 2008). In addition, older adults who lived alone, widowed, and with low body mass indexes presented poorer HRQOL (Sun, 2008). Among older adults who received day care service, women with relatively higher education and higher self-rated health status scored higher in social relationship domain (Yu et al., 2012). However, one study showed that overall, older women had poorer HRQOL in most dimensions than men (Hsu, 2007).

Above all, demographic characteristics such as age, gender, education, income, living arrangement, and marital status, as well as social activities, (Li, Lin, & Chen, 2011) have been found to be associated with HRQOL among older adults. However, little is known about
the relationship between these demographic characteristics and Taiwanese older widowers’ HRQOL.

Previous studies related to older widowers have addressed the general health, psychological and social issues following spousal loss, especially during recent bereavement; however, while follow-up studies have examined mortality rates in later bereavement, the literature lacks research findings on long term HRQOL. To develop appropriate interventions more research is needed about how psychological, physical, social, and environmental conditions impact one another as measured by a HRQOL instrument throughout all stages of spousal bereavement.

**HRQOL among bereaved spouses.** Two studies with bereaved spouses have suggested HRQOL is lower for bereaved spouses than for married people (Fry, 2001; Grimby, 1993). According to Holtslander (2008), cancer and palliative care clinical practice guidelines highlighted that support for bereaved family caregivers must continue through the process of grief and bereavement. Holtslander argued that bereaved caregivers have a high risk for many distressing symptoms such as depression and sleeplessness. However, very little is known about the bereaved individuals’ quality of life, well-being, and health outcomes or effective interventions. In Sweden, Grimby (1993) investigated grief reaction, post-bereavement hallucinations and illusions, and quality of life among older widowers and widows. The result of comparing the scores among the bereaved and married participants indicated that bereaved...
older adults scored lower on quality of life than married older adults (Grimby, 1993). In Canada, Fry (2001) found that older widows scored significantly higher than older widowers in perceived overall health-related quality of life. In the United States, Ott, Lueger, Kelber, and Prigerson (2007) found that older widows and widowers scoring more highly in resiliency experienced the lowest levels of grief and the highest quality of life. In these studies, poorer overall HRQOL was found in older widowers, and HRQOL was not the main focus of the studies. Overall, QOL includes multidimensional domains such as physical health, psychological health, social relationship, and environment. Each component of HRQOL was not addressed in detail in either of these studies. In addition, both of these studies were not focused on older widowers.

**Theoretical Framework**

In 1999, Stroebe and Schut developed the dual process theoretical model (DPM) specifically for widow(er)s coping with bereavement. Two types of stressors required coping efforts during everyday life following bereavement were found. The first stress was loss-oriented stressors, such as grief and breaking bonds. The second stress was restoration-oriented stressors, such as attending to life changes and mastering new tasks. The DPM bereavement model has been tested and used in studies on widowhood (Bennett, Gibbons, & Mackenzie-Smith, 2010; Lund, Caserta, Utz, & De Vries, 2010; Richardson & Balaswamy, 2001). However, some researchers have encountered challenges utilizing the
DPM to explain their findings (Bennett et al., 2010) and in examining the effectiveness of DPM based interventions (Lund et al., 2010). Although this model has been developed to represent the widow(er)s experiences, challenges in applying the model across cultures may hinder rather than support its use in bereavement research.

Therefore, although not only about bereavement, Meleis’ transition theory was used for this study because it accounts for cultural and societal issues faced by widowers in Taiwan (Meleis, Sawyer, Im, Messias, & Schumacher, 2010). This study used Meleis’ model to guide determination of the independent variable (IV) and potential predictors.

**The Emerging Middle-Range Theory of Transitions**

Meleis and her colleagues (2010) developed the middle-range theory of transitions based on the results of five research studies (Im, 1997; Messias, 1997; Messias, Gilliss, Sparacino, Tong, & Foote, 1995; Sawyer, 1999; Schumacher, 1994). The theory consists of four main parts: (a) nature of transitions, (b) transition conditions, (c) patterns of response, and (d) Nursing therapeutics (see Figure 1).
Nature of transitions. The nature of a transition includes types of transition, patterns of the transition, and properties of the transition. Four types of transitions including developmental, situational, health or illness, and organizational occur to almost all individuals throughout their life span. Spousal bereavement is an example of a situational transition. As a transition may trigger other transitions, relationships between transitions compose the patterns of transitions. Properties of the transition experience include awareness, engagement, change and difference, time span, and critical points and events. Each of these properties is identifiable in the spousal bereavement experience.

Transition conditions. Transition conditions include both facilitators and inhibitors in
three levels: personal, community, and society levels. The personal level of transition conditions includes four elements: (a) meaning, (b) cultural beliefs and attitudes, (c) socioeconomic status, and (d) preparation and knowledge. Community and social levels of a transition condition represent environmental circumstances. Community conditions refer to the availability of community resources such as grocery stores, restaurants, laundries and health care service that may either facilitate or inhibit a transition. Social conditions refer to the larger environmental condition such as social beliefs. How a society views a transition event can either facilitate or inhibit the transition.

**Patterns of responses.** The patterns of response include process indicators and outcome indicators. Process indicators involve: (a) feeling connected, (b) interacting, (c) location and being situated, and (d) developing confidence and coping. The process could lead the individuals toward either health or vulnerability and risk. Early nursing assessment and effective intervention may facilitate positive transition outcomes. The outcome indicators include: (a) mastery of necessary skills for managing the transition, and (b) development of fluid integrative identities.

**Nursing therapeutics.** The optimal goal of nursing care is to maintain or promote health outcomes by providing effective nursing interventions. The development of knowledge in regard to nursing therapeutics can be preventive or therapeutic. Furthermore, as developing nursing interventions, “the dimensions of time, pattern, type of transition, and timing of
intervention” need to be considered. By providing effective preventive and therapeutic interventions at appropriate timing, nurses can enhance the clients’ transition toward positive outcomes in a fluent way (Meleis, 2010). The findings from the pleasant study may be applicable to develop interventions to enhance QOL for older widowers in Taiwan.

In summary, among the four main parts of Meleis’s transition theory, nature of transitions, transition conditions and nursing therapeutics are considered to influence the patterns of response. Nurses need to identify the types and patterns of transitions that clients are going through, comprehensively assess the properties of clients’ transition experiences, detect the facilitators and inhibitors within clients’ personal characteristics and social cultural context, develop effective interventions to facilitate smooth transition, and evaluate the outcome of transitions.

**Research Studies That Have Applied the Theory of Transitions**

Meleis’ theory of transitions has been used in several nursing studies to guide quantitative (Rossen & Knafl, 2007; Weiss & Lokken, 2009; Weiss et al., 2007) and qualitative (Marnocha & Bergstrom, 2011) inquiries. Some of the transitions explored were being discharged from hospital to home after childbirth (Weiss & Lokken, 2009); women’s well-being after relocation to independent living communities (Rossen & Knafl, 2007); and the lived experience of perimenopause and menopause (Marnocha & Bergstrom, 2011).

**Application of the Meleis’s Theory of Transitions to the Present Study**
Spousal bereavement from the role of a husband to a widowed man is a situational transition (Meleis, 2007). In this study, the cause of spousal death, anticipation of the death, and duration of widowhood represents many transitions. Older widowers’ demographic characteristics including age, marital status, religion, personal beliefs, socioeconomic status, financial resources, and education represent conditions in both the personal and environmental transition levels. These situations may positively or negatively influence the transition process and quality of life in bereavement.

Summary

Older widowers were found to be at higher risk of mortality and morbidity (Joanna Briggs Institute, 2006; Subramanian et al., 2007), depressive feelings (Bennett et al., 2005), and suicide (Erlangsen et al., 2004) than married men or older widows. Typically, if widowers were studied, the target population also includes widows. In the United States, few studies directly addressed the unique issues of older widowers (Balaswamy et al., 2004; Moore & Stratton, 2002; O’Hearn Pepin, 2010; van den Hoomaard, 2009). In Taiwan, only one study addressed unique bereavement issues for older widowers, i.e., coping strategies to spousal bereavement and self-perceived meanings of widowed life (Sun, 2009). However, the general absence of research on widowers from any culture prohibits conclusions on the affect of bereavement on HRQOL. The expected growth in the widower population may lead to higher demands for families and professionals (van den Brink et al., 2004). More information
is needed about the health care needs of older widowers experiencing bereavement to develop culturally appropriate and cost effective interventions to meet the needs of this population.

HRQOL is an indicator of health outcomes that includes social, cultural, emotional, spiritual, and physical factors. Further, it is a measure of people’s perception of their health and wellbeing. Not many health care providers are currently using HRQOL as a health outcome indicator in addition to mortality and morbidity data among older widows and widowers. This study shifts the research focus from older widowers’ mortality and morbidity to a broader focus on multidimensional HRQOL. Although the population of older widowers is relatively fewer in number than the population of older widows, older widowers should also receive appropriate care and support given their apparent higher risk for adverse outcomes.
CHAPTER THREE
RESEARCH DESIGN AND METHODOLOGY

This chapter introduces the descriptive quantitative methodology of the present study designed to assess the health-related quality of life (HRQOL) among older widowers in Taiwan. The main research question includes: “Among older widowers in Taiwan, what is their demographic characteristics and HRQOL? How do the demographics of the target population predict measured outcomes of HRQOL? And what are their health-related needs?”

The content is organized into the following sections: (a) Specific Aims, (b) Design Overview, (c) Ethical Consideration, (d) Setting, (e) Sample, (f) Data Collection Procedure, (g) Instruments Used to Collect Data, and (h) Data Analysis.

Specific Aims

The specific aims of the proposed study include: (a) to describe the demographic characteristics and the HRQOL of widowers 60 years of age and older living in Taiwan, (b) to identify related demographic variables associated with HRQOL of the target population, (c) to identify statistically significant demographic predictors of the HRQOL in older widowers in Taiwan, and (d) to identify health-related needs of older widowed men in Taiwan. Through accomplishing the four aims, this research provides a profile of demographic characteristics of older widowers in Taiwan and their overall health outcomes in physical, psychological, social, and environment domains; reveal demographic variables that may predict HRQOL,
thereby, awareness of the predictors may help nurses identify older widowers who are more likely to be at risk of poor HRQOL.

**Design Overview**

This quantitative study used a cross-sectional design to investigate HRQOL of widowers aged 60 years and older in Taiwan. The researcher employed the WHOQOL-BREF Taiwan version, a demographic questionnaire, and a brief single-item question to collect data. This research was conducted in Mandarin Chinese and/or Taiwanese in Taiwan. The analysis applied descriptive and multivariate analytic techniques and frequency counts of the single-item responses.

**Ethical Consideration**

Ethical issues existed in conducting this research because death is a taboo issue in Taiwanese culture. Participants recruited in bereavement research would very likely recall sad memories about the deceased. Asking research participants to recall sad memories about the deceased when the concept related to sad memories is taboo in the culture creates an ethical dilemma. As a researcher, it is important to clarify that the research won’t harm participants, and to decide an appropriate approach to investigate a culturally taboo issue.

**Previous research addressing ethical concerns of bereavement research.** According to Beck and Konnert (2007), “There are numerous ethical issues to consider when conducting research on bereavement, yet there is little empirical work addressing this topic” (p. 783).
Dyregrov (2004) also argued, “Despite the ethical codes guiding bereavement research, few studies have been conducted to evaluate the perceived stress experienced by the bereaved, and to explore which methodologies cause least distress” (p. 391). Dyregrov (2004) investigated bereaved parents’ experience of research participation in Norway. The findings showed that all participants experienced their participation as positive or very positive; no one regretted participating. The positive experience was related to three factors: “being allowed to tell their complete story, the format of the interview, and a hope that they might help others” (p. 783). However, “three-quarters of the interviewees reported that it was to a greater or lesser degree painful to talk about the traumatic loss” (Dyregrov, 2004, p. 391). Conducting research with vulnerable populations might be considered unethical if it “may rip open old wounds” (Cook, 2002; Cooper, 1999; Newman, Walker, & Gefland, 1999; Rosenblatt, 1995). On the other hand, researchers suggested that talking about bereavement helps individuals heal and find meaning in the experience (Neimeyer, 2000; Steeves, Kahn, Ropka & Wise, 2001). Indeed, participants are “the best judges of whether the participation in research is perceived as harmful or beneficial” (Dyregrov, 2004, p. 392).

Bereaved participants in Dyregrov’s (2004) research also provided five recommendations to future researchers: (a) A letter or written information is preferred as the first approach rather than telephone contact, so that the participants have plenty of time to consider whether they are participating the research. (b) The participants want to decide
where and when to meet for the interview, as well as how much time the interview would take. (c) Trained interviewers who are empathic and informed with related knowledge are expected to conduct the interview. (d) Interviewers are expected to take care of the participants before, during and after the interview; and to allow them to ask questions following the interview. (e) Interviewers are expected to discuss the research findings with the bereaved individual and ask for their feedback.

Cook and Bosley (1995) conducted a follow-up study of bereaved individuals who had participated in an interview study of funeral rituals of a loved one in the United States. The results showed that most participants considered participation in the research as overall positive and beneficial. The benefits included the opportunity of sharing their feelings, gaining insight of their own loss, educating others, promoting open discussion of death, preparing others for loss experiences, helping other bereaved individuals understand their grief and giving them hope, and helping professionals better understand grief issues.

Although previous research has supported studies on bereavement as ethical when the ethical codes are carefully followed and appropriate methodologies are applied by researchers, the results might not be generalized to Taiwan’s cultural context, which differs from a Western cultural context. Whether bereavement research is unduly stressful or therapeutic, positive or negative, to Taiwanese participants is not known.

There was another ethical consideration in the present study. The participants were
bereaved older men who were likely experiencing physical and mental distress, including suicide ideation (Byrne & Raphael, 1997), therefore, the researcher needed to carefully protect the participants. Strategies applied to protect the participants and conduct an overall ethical study are described in the following sections.

**Alternative approach to the bereaved older widower in Taiwan.** In order to better protect the bereaved Taiwanese elderly widowers, an alternative approach, HRQOL, rather than the experience of bereavement, was applied to investigate these bereaved individuals. As a nurse researcher, in addition to care about their bereavement experience, I cared more about how the bereaved individuals live their lives and how their HRQOL might change following the spousal bereavement. Therefore, a focus on their HRQOL was a main aim of the present study. A verified instrument, Taiwan version of WHOQOL-BREF, was used to measure the bereaved individuals’ HRQOL.

**Protection of research participants.** Before commencing the present study, the researcher submitted the proposal including both of the Chinese version and English version of informed consent, the demographic questionnaire and the Taiwan version of WHOQOL-BREF instrument to the Institutional Review Board (IRB) of Washington State University (WSU); submitted only Chinese version of all instruments and English version of research proposal to National Cheng Kung University Research Ethics Committee for Human Behavioral Sciences (NCKU REC-HBS) in Tainan, Taiwan. No data were collected prior to
WSU IRB and NCKU REC-HBS approval. The questionnaires were anonymous to keep the data unidentifiable. All collected data were kept in a locked briefcase.

**Informed consent.** At each scheduled interview, the researcher or research assistants read the consent aloud, in Taiwanese or Mandarin, which explained the purpose and procedures of the study; informed participants that they could withdraw from the study at any time. The informed consent described the potential benefits and risks to the participants. The potential benefits included the possibility that the older widowers might enjoy interacting with the interviewers or research assistants, sharing their HRQOL and might experience personal value from contributing to research by participating in the present study. The potential risk to the participants was that the information requested in demographic questionnaire and WHOQOL-BREF Taiwan version might trigger the older widowers’ grief experiences of spousal bereavement. Shih and her colleagues (2010) indicated that some participants requested their friends or family members to be present during interviews for companionship or support. In the present study, the researcher allowed family or friends to accompany participants during the interviews or administration of questionnaires upon the participant’s request as long as the interview was not disrupted. Three phone numbers of free counseling services were provided in case participants needed. The three numbers were: (a) 1995 as “Life Line” of each city or county, (b) 1980 as “Teacher Chang” of each city or county, and (c) 0800-788-995 as “Ease your mind” hot line of Department of Health in
Taiwan. The entire informed consent process was conducted in Taiwanese or Mandarin as spoken language with content written in Han (traditional Chinese) characters.

**Setting**

Data collection took place in public areas or a room with privacy where the participants felt comfortable. Some participants chose to be interviewed at a quiet corner of a lounge in community senior care centers, community parks, or school campus. Some were interviewed at out-patient unit, a meeting room in nursing home or day care center, a seminar room of city library or school library. For the participants who had limited mobility or preferred to participate in the present study at home, the researcher and a research assistant visited the participants at home and administered the questionnaires.

This study was conducted in Tainan, Taiwan. Tainan is a historical city located in the southwest of Taiwan, as a part of Jianan Plain, with a nearly 70 km long coastline in the west facing to Taiwan Trait. The population of Tainan was about 1,870,000 people. The total area of the city is about 2192 km² (or 846 square miles) accounted for about 6% of Taiwan. The economy is blended with agricultural, fishing, high-tech industry, and tourism. The city was chosen for convenience of location of residence of the researcher.

**Sample**

Participants were recruited from men aged 60 years or older experiencing spousal bereavement after aged 50 years. Convenience sampling and snowball techniques were used
to recruit participants. Convenience sampling is also called accidental sampling in which the researcher “sample by asking volunteers” (Trochim & Donnelly, 2008, p. 49). Snowball sampling is “a sampling method in which you sample participants based upon referral from prior participants” (Trochim & Donnelly, 2008, p. 49). Study recruitment fliers were distributed in community senior centers, community health centers, primary care clinics, out-patient unit, day care center, and nursing home in Tainan, Taiwan. Facility staff assisted in participant recruitment by providing printed information of the study to older widowers when they visited the clinics or attended activities in community senior centers. Staff notified the researcher if potential participants expressed interest in the study. Those older widowers who showed interest in the study were contacted by the researcher by telephone for further discussion and to make appointments for data collection.

* A priori power analysis indicated that for 80% power, given α = .05 and expecting a medium effect ($f^2 = .15$), 157 participants were needed to examine the predictive ability of all 20 independent variables (G*Power Version 3.1.2). A priori power analysis indicated that for 80% power, given α = .05 and expecting a large effect ($f^2 = .35$), 77 participants were needed to examine the predictive ability of all 20 independent variables (G*Power Version 3.1.2). Note that only those independent variables that were statistically significantly correlated were entered into the regressions and therefore the sample size needed might be less. Participants were offered a small incentive (valued one to two lunch meals for an older adult in Tainan)
for participating in the study.

**Inclusion criteria.** The inclusion criteria for participants were: (a) men aged 60 years or older, (b) spousal bereaved after 50 years of age, (c) able to speak and understand Taiwanese or Mandarin, or read Traditional Chinese, (d) spousal bereavement result from all causes of death, and (e) remarried was permissible as their past experience as a widower was valuable to the study.

**Exclusion criteria.** This study excluded older widowers who were acutely ill or hospitalized.

**Data Collection Procedure**

The researcher trained two research assistants to collect and administer the WHOQOL-BREF Taiwan version questionnaire. However, both of the research assistants failed to collect data independently due to some personal reasons. A number of older adults who had vision impairment had difficulty in reading the questionnaires and writing the answers. To help with this issue, the interviewer read aloud the questions and recorded the oral answers for the participants.

After participants signed the informed consents, the researcher read aloud questions in WHOQOL-BREF instrument and demographic tool, and then filled in participants’ oral answers for them. A few participants preferred to fill out the questionnaires by themselves. The researcher or research assistants were prepared to clarify the items or procedures if
participants had questions about how to fill in the demographic questionnaire or answer the HRQOL questionnaire.

Training of research assistants included using responses from the first five participants. The researcher and each of research assistants simultaneously and independently recorded the oral answers of the participant. After the interview, the researcher and the assistant collaborated to check the agreement among the answers of all questionnaires. This procedure continued until ninety percent agreement was achieved among the researcher and research assistants.

**Instruments Used to Collect Data**

**World Health Organization Quality of Life (WHOQOL)-BREF Taiwan Version.**

The instrument used to measure participants’ HRQOL was WHOQOL-BREF Taiwan version translated and culturally adapted from WHOQOL-BREF (Yao, Chung, Yu, & Wang, 2002; Yao, Wang, & Chung, 2007). WHOQOL-BREF is a cross-cultural instrument originally developed by WHO in English. The first developed instrument, WHOQOL-100, is a long form version including 100 items in 24 facets categorized into 6 domains: (a) physical, (b) psychological, (c) level of independence, (d) social relationships, (e) environment, and (f) spirituality/religion/personal beliefs (The WHOQOL Group, 1995). Considering the practical application of the long form questionnaires, WHO (1996) simplified WHOQOL-100 to a brief version called WHOQOL-BREF containing 26 items in 24 facets with one item in each
facet and 2 items (Q1 and Q2) in general facet (Facet G). After combination of domains “physical” and “level of independence,” and combination of domains “psychological” and “spirituality/religion/personal beliefs” according to the results of factor analysis, the original 6 domains were simplified into 4 domains: (a) physical health, (b) psychological health, (c) social relationships, and (d) environment (WHO, 1996).

The WHOQOL-Taiwan Group developed the WHOQOL long form for Taiwan over a two-year period and completed the Taiwan version in 1999 (The WHOQOL-Taiwan Group, 2000). To adapt to Taiwanese cultural context, The WHOQOL-Taiwan Group analyzed recorded qualitative content of focus groups, including participants and interdisciplinary experts, and proposed two new facets: (a) being respected/accepted, and (b) eating/food. According to psychometric analysis, the facet of “being respected/accepted” was classified into the domain of social relationships, and the facet of “eating/food” was classified into the domain of environment (Yao, Chung, Yu, & Wang, 2002). Total raw scores of each domain can be transformed from 4 to 20 or 0 to 100 (WHO, 1996). The higher the scores, the better the HRQOL outcomes.

The WHOQOL-Taiwan Group simplified the WHOQOL long form Taiwan version and developed the WHOQOL-BREF Taiwan version. The first 26 items were the same in the English version and Taiwan version of WHOQOL-BREF to enable cross-cultural comparison. In order to adapt to Taiwanese cultural context, one item was selected from each new facet,
previously developed in long form version of WHOQOL for Taiwan, to add as items Q27 and Q28 to the 26 original items (Yao et al., 2002). All of the 28 items were collected to form the WHOQOL-BREF Taiwan version. The new item selected from the “being respected/accepted” facet was Q27, “Do you feel respected by others?” The other new item selected from the “eating/food” facet was Q28, “Are you usually able to get the things you like to eat?” (Yao et al., 2002, p.344). Psychometric properties including reliability and validity of the WHOQOL-BREF Taiwan version were well examined (Yao et al., 2002). The internal consistency (Cronbach’s α) coefficients for the domain level were 0.70 to 0.77, and for the whole questionnaire 0.91 indicating that WHOQOL-BREF Taiwan version has good reliability (Yao et al., 2002). The correlations between item and its domain were 0.53 to 0.78, and the range was 0.51 to 0.64 for inter-domain (all \( p < 0.01 \)), indicating good content validity (Yao et al., 2002).

The dependent variables (DVs) in the present study included general facet scores (Q1 and Q2) and domain scores in each of four domains: physical health (domain 1), psychological health (domain 2), social relationships (domain 3), and environment (domain 4). For social relationships (domain 3) and environment (domain 4), each domain score was computed separately with and without the Taiwan national item in each domain (Q27 in domain 3; Q28 in domain 4). Therefore, there were two domain scores (computed with and without national item) for domain 3 and domain 4. For example, "social" domain score was
computed from original 3 items (Q20, Q21, Q22); "social (TW)" domain score was computed from original 3 items and Taiwan national item (Q20, Q21, Q22, Q27). (TW) refers to computations in domain 3 and 4 that include a Taiwan national item. Similarly, domain 4 included 2 domain scores marked as "environment" and "environment (TW)." Due to 2 domain scores in each of domain 3 and domain 4, the total of 8 dependent variables (DVs) were entered in all statistical procedures.

**Demographic information.** A questionnaire used to collect participants’ demographic information was revised from a demographic tool developed from a previous study of Taiwanese older grandparents (Lo & Liu, 2009). The demographic variables, designed as independent variables (IVs) in this present study were determined according to Meleis’ transition theory (Meleis, 2000) and based on previous research findings about factors associated with effects of spousal bereavement and factors related to HRQOL among older adults. The participants’ demographic data included: (a) age and date of birth, (b) ethnic group, (c) education, (d) occupation, (e) income and resources other than occupation, (f) perceived financial situation, (g) years since bereaved, (h) cause of wife’s death and whether anticipate wife’s death, (i) years of marriage and past relationship with wife prior to bereavement, (j) current marital status, (k) numbers of sons, daughters, grandsons and granddaughters, (l) living arrangement, (m) frequency of interaction with children and/or grandchildren, (n) participation in care giving of grandchildren, (o) years of living in current
neighborhood, (p) frequency of interaction with neighbors, (q) frequency of interaction with friends, (r) participation in volunteer activities, (s) self-reported chronic conditions, and (t) self-reported number of prescribed long-term use medications.

**Open-ended single-item question.** The use of a single-item question can effectively assess global perceptions of HRQOL and/or health status (Haberman & Bush, 2003) and measure depression (Skoogh, 2010). Accordingly, one open-ended single-item question was used to identify the health-related needs of the older widowed men. The question was “Please identify the personal health-related needs that you have at this current time that, if met, would improve your quality of life. You may list (or name) as many as come to mind.” Participants were asked to give an answer in writing or verbally to the interviewer.

**Data Analysis**

The researcher applied descriptive statistical methods, correlation analysis, and multiple regressions to the collected data. PASW Statistics, version 17, former SPSS, was used to save the data and perform the statistical procedure.

**Descriptive statistical analysis.** Descriptive statistical techniques were used to analyze the demographic information and calculate the frequencies, percentages, mean scores and standard deviation of two general items (Q1 and Q2) and each domain to reach specific aim (a): “To describe the demographic characteristics and the HRQOL of widowers 60 years of age and older living in Taiwan.”
**Correlation analysis.** Correlation analysis was used to examine the relationships of demographic information and HRQOL to identify the related demographic variables of HRQOL and reach the specific aim (b): “To identify related demographic information associated with HRQOL of the targeted population.” Correlation analysis is a statistical technique used to examine the relationship between two variables, for example, “Does variable A increase variable B?” (Portney & Watkins, 2009, p. 523). Correlation coefficient is an index describing “the strength and direction of a relationship between two variables” (Portney & Watkins, 2009, p. 523). P values of ≤ .05 was used to determine statistical significance (Trochim, 2006).

**Statistical assumptions.** Statistical assumptions of correlation include normality, linearity and homoscedasticity (Mertler & Vannatta, 2005).

**Normality.** Normality indicates “a normal sample distribution” which will result in a graph of bell-shape distribution (Mertler & Vannatta, 2005, p. 30). Based on the number of variables, normality can be discussed in two types: univariate normality and multivariate normality (Mertler & Vannatta, 2005). Univariate normality means “all observations in the sample for a given variable are distributed normally.” Therefore, in the present study, univariate normality was tested first. To examine univariate normality, several methods such as skewness and kurtosis, and a normal Q-Q plot can be used to examine the assumption of univariate normality (Mertler & Vannatta, 2005). According to Mertler and Vannatta (2005),
“skewness is a quantitative measure of the degree of symmetry of a distribution about the mean; kurtosis is a quantitative measure of degree of peakedness of a distribution” (p. 30). A straight line of a Q-Q plots or zero in both values of skewness and kurtosis indicate that the assumption of normality is met (Mertler & Vannatta, 2005). If the assumption of normality is violated, the researcher may consider proceeding data transformation such as a square root transformation for data with moderate difference from normal distribution (Mertler & Vannatta, 2005).

**Linearity.** The second assumption, linearity, indicates the linear combination of variables; or “a straight line relationship between two variables” (Mertler & Vannatta, 2005, p. 32). Residuals plots is one of methods used to examine the linearity. Residuals are “the portions of scores not accounted for by the multivariate analysis…, also referred to as ‘prediction errors’…” (Mertler & Vannatta, 2005, p.32). If the assumption is not met, the researcher may consider transforming raw data to “enhance the linear relationship” (Mertler & Vannatta, 2005, p.32).

**Homoscedasticity.** Homoscedasticity means “variability in scores for one continuous variable is roughly the same at all values of another continuous variable” (Mertler & Vannatta, 2005, p.34). Box’s-M test can be used to examine the assumption of homoscedasticity. If this assumption is not met, the researcher may consider transforming the variables (Mertler & Vannatta, 2005). However, even if the data were transformed, failure to meet the assumption
of homoscedasticity will result in a less efficient analysis (Mertler & Vannatta, 2005).

**Types of variables.** Within demographic data, independent variables include nominal variables, ordinal variable, and continuous variables. Nominal variables include ethnicity, occupation, living arrangement, cause of wife’s death, and religion/personal beliefs. Ordinal variables include education, total income, past relationship with wife, frequency of contacting adult children/neighbors/friends. Continuous variables include age, years since bereaved, years of marriage, self-reported number of chronic conditions (No. of Cond. for short), and self-reported number of prescribed medications (No. of Med. for short). The dependent variables include the scores of general items (Q1 and Q2) and each domain of WHOQOL-BREF Taiwan version. Pearson product-moment was used to examine the relationship between continuous independent variables such as income and continuous dependent variables such as HRQOL scores (Portney & Watkins, 2009). Spearman’s rho analysis was used to examine the relationship between ordinal independent variables and dependent variables (Portney & Watkins, 2009). When the relationship between two variables is statistically significant, regression as a further statistical analysis can be used to establish a model for prediction (Portney & Watkins, 2009).

**Multiple regressions.** The researcher applied multiple regression analysis to identify the predictors of HRQOL and reach the specific aim (c): “To identify statistically significant demographic predictors of the HRQOL in older widowers in Taiwan.” Only statistically
significant demographic correlates were entered into the regression models. Multiple regression is a statistical technique used to “predict the value Y using a set of several independent variables” (Portney & Watkins, 2009, p.687). This statistical analysis will result in a multiple regression equation. A multiple regression output contains elements for interpreting the meanings of prediction. The coefficient of determination or $R^2$ was interpreted as “the proportion of one variable in the pair that can be explained (or accounted for) by the other variable” (Mertler & Vannatta, 2005, p.168). Regression coefficients, also called beta coefficients or $\beta$, include one for $Y$-intercept ($B_0$) and one for each IVs or predictor variables ($B_1, B_2, \ldots, B_k$). The value of $\beta$ representing the weights for each independent variable will provide the best linear combination of predictor variables which leads to the least total squares errors (Mertler & Vannatta, 2005). Regression models were run to analyze the predictive ability of demographic information variables for scores in WHOQOL-BREF including: (a) self-rated overall QOL, (b) satisfaction with health, (c) transformed domain score of physical health, (d) transformed domain score of psychological health, (e) transformed domain score of social relationships, (f) transformed domain score of social (TW) relationships, (g) transformed domain score of environment, and (h) transformed domain score of environment (TW). P values of equal to or less than .05 were used to determine statistical significance (Trochim, 2006).

**Statistical assumptions.** Since multiple regression is extended from simple linear
regression, and simple linear regression is based on statistically significant correlation, therefore, three assumptions of normality, linearity, and homoscedasticity were also pre-required for multiple regression analysis (Portney & Watkins, 2009). Additionally, no or little multicollinearity is also a required assumption for multiple linear regressions (Assumptions of Multiple Linear Regression, 2012). Multicollinearity indicates statistically significant correlations between the independent variables of a regression model. In a regression equation, each independent variable is expected to contribute a unique part of total information explaining the dependent variable. In other words, each independent variable in the equation should not be correlated to each other so that the information they provide to the model would not be partially redundant (Portney & Watkins, 2009). Therefore, when a linear regression equation is proposed, the correlations between each predictor need to be examined. A value of tolerance less than .1 indicates the problem of multicollinearity should be concerned. If multicollinearity occurred, the researcher could consider removing redundant variable or aggregating the correlated variables (how2stats, 2011).

**Content analysis.** To accomplish the specific aim (d): “To identify health-related needs of older widowed men in Taiwan,” the researcher listed all single-item responses (reported health-related needs) and applied content analysis to describe and count the frequency of the health-related needs of the older widowed men in Taiwan.

**Summary**
This quantitative study used WHOQOL-BREF Taiwan version to assess the HRQOL of older widowers in Taiwan. The main research question included: “Among older widowers in Taiwan, what is their HRQOL? How do the demographics of the target population predict measured outcome of HRQOL? And what are their health-related needs?” Descriptive statistical analysis was used to describe the HRQOL of widowers 60 years of age and older living in Taiwan. Correlation analysis was used to identify related demographic information associated with HRQOL of the targeted population. Multiple regressions were used to identify statistically significant demographic predictors of the HRQOL in older widowers in Taiwan. Lastly, one single-item open-ended question was used to identify health-related needs of the older widowed men in Taiwan. This research investigation enriched the body of nursing knowledge by exploring the HRQOL, the demographic predictors, and health-related needs of Taiwanese older widowers. This seldom studied population will benefit from interventions provided by nurses and other health care providers.
CHAPTER FOUR

RESULTS

This chapter presents the results of data analysis. All data were collected by using the Taiwan version of WHOQOL-BREF instrument and demographic questionnaire. The software PASW Statistics, version 17, formerly known as SPSS, was used to manage the data and execute statistical analysis. Statistical techniques including descriptive statistical methods, correlation analysis, and multiple linear regressions were used to reach four specific aims: (a) To describe the demographic characteristics and the HRQOL of widowers 60 years of age and older living in Taiwan, (b) to identify related demographic variables associated with HRQOL of the target population, (c) to identify statistically significant demographic predictors of the HRQOL in older widowers in Taiwan, and (d) to identify health-related needs of older widowed men in Taiwan.

Recruitment

The A priori power analysis indicated that for 80% power, given $\alpha = .05$ and expecting a medium effect ($f^2 = 15$), 157 participants were needed to examine the predictive ability of all 20 independent variables (IVs) (G*Power Version 3.1.2). However, a total of seven cultural and procedural factors impacted the recruitment of the study that other researchers studying this population should be aware of. First, talking about bereavement is a taboo in Taiwan’s culture; thus, some older widowers declined participate in the study immediately after
hearing the research title. Second, Taiwanese culture discourages sharing personal
information with those outside one’s family; likewise, elders are less likely to share such
private information with the researcher as a stranger. Five additional factors related to the
research procedure also affected the sample size. First, rather than a self-administered survey
study, each individualized interview required around 1-2 hours. Scheduling a 2-hour
appointment proved challenging for a number of potential participants as their strict daily
routines made finding a mutually available time difficult. Second, once an interview time was
arranged, communication with the older adults demanded more time as the interviewer had to
speak more slowly and clearly than communication with younger adults. A third procedural
factor affecting the time was the cognitive complexity of the interview items. The majority of
participants, who lacked education beyond primary level, needed clarification of difficult
concepts such as quality of life, as well as time to reflect on their responses to each item. A
fourth factor, recalling and sharing related memories in the questionnaires, such as years of
marriage, also required the participants to consider each item slowly. Last, participants
articulated their opinions through sharing personal narrative, a procedure which also required
additional time. Therefore, the recruitment stopped at the completion of 102. For the potential
underpowered issues, reduced regression models were performed after standard regression
models were conducted on each of eight DVs. One hundred and two older widowers living in
Tainan, Taiwan were recruited during the period of May 2013 through January 2014. Most
participants were referred by community care center volunteers, village chiefs, community security personnel, Tainan Life Line Association volunteers, physicians, social workers, nurses, community health specialists, and the researcher’s personal contacts. Snowball techniques also brought in participants. Three participants called their widower friends or relatives and obtained permission to give their contacts to the researcher. The researcher contacted the referred widowers to invite them to participate in the research. An appointment for an interview was scheduled when each referred widower was willing to participate. One participant was directly recruited by the researcher at a community center without previous relationship. However, the majority of participants took one to five contacts to recruit one participants. Among the 102 older widowers, 12 were excluded because they did not meet the inclusion criteria either during the interviews or after screening their demographic information. Therefore, the final sample size was 90.

Procedure

One of the unique strengths of this study was the data collection process. Unlike most self-administered survey studies, all participants were interviewed in person during a range of 45 minutes to 3 hours.

Interview location was decided by each participant. Some participants preferred to have the interview in public areas such as a quiet corner in a park, community activity center, café, or library. A number of participants preferred to be interviewed in their home. Some
participants were interviewed at an out-patient unit, a counseling room in day care center or nursing home. In the beginning of the interview, the researcher read aloud the informed consent to the participant and explained the procedure. One participant preferred to read the informed consent form by himself. Once the participant signed the informed consent form, the WHOQOL-BREF Taiwan version survey and the demographic questionnaire were then administered. The interviewer read aloud each item to the participant, and wrote down the participant’s answers. A couple of participants preferred to fill out the survey by themselves. The researcher provided the participants enough time and opportunities to clarify each item in the instrument, and then to answer the question after thinking through or pondering as they needed. Participants illustrated their opinions on the items and experience of their life as they wanted. Most participants were interviewed alone; some participants had their daughter or son or friend or wife as company during the interview. Two daughters left after the first few questions were administered. At the end of the interview, the participant was provided a “red envelop” with a $100 New Taiwan dollars (NTD) ($3.33 USD) cash coupon for convenience stores as compensation. An amendment to the IRB was added after the first 14 interviews to add audio recording. The purpose of this addition was to double check participant responses to ensure the accuracy of collected data. In addition, this data may be used in a future content analysis study to gain more information about older widowers in Taiwan.

Missing Data
Many older widowers were not familiar with the term “Quality of Life” and did not understand the meanings of some items in the WHOQOL-BREF questionnaire. Participants were informed that they were allowed to omit any questions that they did not think applied to them. For example, one participant stated that it was too hard to choose an option when asked his overall quality of life, which created a missing data in item Q1. According to Yao (2005), the Taiwan version of WHOQOL-BREF instruction, there is only one missing item allowed in each of physical, psychological, and social domain. The one missing data should be replaced by the mean score of the rest of the items in the same domain. This procedure was used for all domains of the WHOQOL-BREF for all participants.

In the demographic questionnaire, difficulties in recalling all information created some missing data. For example, in the Taiwan culture, few married couples celebrate their wedding anniversaries, so many participants could not remember how long their marriage had lasted. The researcher often needed to try another way of asking how old participants were when they married and how old they were when their wife passed away. For example, a participant married when he was 24 year-old and lost his wife at his 77, so their marriage lasted 53 years. Some participants considered income, financial support, or illness as private information and did not provide the information.

Descriptive Statistical Analysis for Specific Aim 1

In order to reach specific aim 1: “To describe the demographic characteristics and the
HRQOL of widowers 60 years of age and older living in Taiwan,” descriptive statistical analysis was employed to analyze the demographic information and transformed domain scores in the WHOQOL-BREF instrument. Frequencies, percentages, means and standard deviations were calculated and presented.

**Demographic characteristics: Independent variables (IVs).** The 90 older widowers were aged 61 to 96 years and with a mean age of 78.48 years ($SD = 7.65$). The majority were Holo-speaking Taiwanese (85%), still widowed (95%), had zero to six years of primary education (58%), were financially supported by the social welfare system (89%), living with adult children and/or their family (43%), and did not volunteer (86%) or participate in religious activities (58%) (see Table 1).
Table 1

Demographic Characteristics

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age in Years</td>
<td>90</td>
<td>61</td>
<td>96</td>
<td>78.48</td>
<td>7.65</td>
</tr>
<tr>
<td>Age when lost wife</td>
<td>87</td>
<td>49.0</td>
<td>90.0</td>
<td>70.03</td>
<td>10.25</td>
</tr>
<tr>
<td>Years since bereaved</td>
<td>87</td>
<td>0</td>
<td>33</td>
<td>8.47</td>
<td>8.16</td>
</tr>
<tr>
<td>Years of marriage</td>
<td>82</td>
<td>15</td>
<td>70</td>
<td>43.46</td>
<td>12.00</td>
</tr>
<tr>
<td>Number of sons</td>
<td>90</td>
<td>0</td>
<td>6</td>
<td>2.07</td>
<td>1.20</td>
</tr>
<tr>
<td>Number of daughters</td>
<td>90</td>
<td>0</td>
<td>5</td>
<td>1.59</td>
<td>1.22</td>
</tr>
<tr>
<td>Number of Chronic Conditions</td>
<td>89</td>
<td>0</td>
<td>4</td>
<td>1.36</td>
<td>.98</td>
</tr>
<tr>
<td>Number of Prescribed Medicine</td>
<td>84</td>
<td>0</td>
<td>12</td>
<td>2.44</td>
<td>2.26</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>77</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For self-identified ethnicity (see Table 2 and Table 3), about 15% of participants were Mainlanders who compose 13% of Taiwan’s population. The rest of non-mainlander participants (85%) were biologically related to the subgroup of Han and Hoklo (or Holo) while approximate 50% identified themselves as “Taiwanese,” and only 4% recognized themselves belonging to three different levels of ethnicity group (see Table 3). No participant self-identified as Hakka (15% of Taiwan population) or Indigenous Taiwanese (2% of Taiwan population). A number of older adults seemed confused and pondered when they were asked
about their ethnicity. This may be due to political and historical issues in Taiwan.

Table 2
Self-identified Ethnicity Group

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>n</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taiwanese</td>
<td>56</td>
<td>(62.2)</td>
</tr>
<tr>
<td>Han</td>
<td>14</td>
<td>(15.6)</td>
</tr>
<tr>
<td>Holo</td>
<td>24</td>
<td>(26.7)</td>
</tr>
<tr>
<td>Hakka</td>
<td>0</td>
<td>(0)</td>
</tr>
<tr>
<td>Mainlander</td>
<td>14</td>
<td>(15.6)</td>
</tr>
<tr>
<td>Indigenous</td>
<td>0</td>
<td>(0)</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>(0)</td>
</tr>
</tbody>
</table>

Note. % will not add up to 100% as participants were allowed to indicate more than 1 group.

Table 3
Self-Identified Ethnic Group (with Multiple Choices)

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>n</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taiwanese</td>
<td>44</td>
<td>(48.9)</td>
</tr>
<tr>
<td>Han</td>
<td>7</td>
<td>(7.8)</td>
</tr>
<tr>
<td>Holo</td>
<td>13</td>
<td>(14.4)</td>
</tr>
<tr>
<td>Hakka</td>
<td>0</td>
<td>(0)</td>
</tr>
<tr>
<td>Mainlander</td>
<td>12</td>
<td>(13.3)</td>
</tr>
<tr>
<td>Indigenous</td>
<td>0</td>
<td>(0)</td>
</tr>
<tr>
<td>Taiwanese + Holo</td>
<td>7</td>
<td>(7.8)</td>
</tr>
<tr>
<td>Han + Taiwanese + Holo</td>
<td>4</td>
<td>(4.4)</td>
</tr>
<tr>
<td>Han + Mainlander</td>
<td>2</td>
<td>(2.2)</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td>(1.1)</td>
</tr>
</tbody>
</table>

Many participants stated that due to their childhood World War II experience when Taiwan was involved in the Western Pacific Ocean battlefield, their education was interrupted by the war or the hardships related to the transition of governors from Japan to Republic of China (R.O.C., current official name of Taiwan). Twenty percent had none to some
elementary school, and 43.3% had elementary school as their highest level of education (see Table 4). Nearly 20% still worked part-time or full-time. Approximately 60% were covered by social welfare plan in financial support. Seventy percent of participants had an average monthly total income less than $29,999 New Taiwan dollars ($1,000 USD) (see Table 5).

Table 4

<table>
<thead>
<tr>
<th>Education</th>
<th>n</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>8</td>
<td>(8.9)</td>
</tr>
<tr>
<td>Some elementary</td>
<td>10</td>
<td>(11.1)</td>
</tr>
<tr>
<td>Elementary</td>
<td>39</td>
<td>(43.3)</td>
</tr>
<tr>
<td>Middle school</td>
<td>10</td>
<td>(11.1)</td>
</tr>
<tr>
<td>High/Vocational school</td>
<td>12</td>
<td>(13.3)</td>
</tr>
<tr>
<td>College</td>
<td>10</td>
<td>(11.1)</td>
</tr>
<tr>
<td>Master’s degree</td>
<td>1</td>
<td>(1.1)</td>
</tr>
</tbody>
</table>
Table 5

*Financial Support and Total Income per Month*

<table>
<thead>
<tr>
<th></th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Children support in financial</strong></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>55 (61.1)</td>
</tr>
<tr>
<td>Yes</td>
<td>34 (37.8)</td>
</tr>
<tr>
<td>Missing</td>
<td>1 (1.1)</td>
</tr>
<tr>
<td><strong>Social welfare</strong></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>28 (31.1)</td>
</tr>
<tr>
<td>$3,500 NTD ($117 USD)</td>
<td>26 (28.9)</td>
</tr>
<tr>
<td>$7,000 NTD ($234 USD)</td>
<td>29 (32.2)</td>
</tr>
<tr>
<td>Missing</td>
<td>7 (7.8)</td>
</tr>
<tr>
<td><strong>Invest</strong></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>82 (91.1)</td>
</tr>
<tr>
<td>Yes</td>
<td>8 (8.9)</td>
</tr>
<tr>
<td><strong>Total income per month</strong></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>1 (1.1)</td>
</tr>
<tr>
<td>&lt;10 K ($333 USD)</td>
<td>27 (30.0)</td>
</tr>
<tr>
<td>10 K - 19,999 ($667 USD)</td>
<td>18 (20.0)</td>
</tr>
<tr>
<td>20 K - 29,999 ($1,000 USD)</td>
<td>18 (20.0)</td>
</tr>
<tr>
<td>30 K - 39,999 ($1,333 USD)</td>
<td>8 (8.9)</td>
</tr>
<tr>
<td>40 K - 49,999 ($1,666 USD)</td>
<td>1 (1.1)</td>
</tr>
<tr>
<td>50 K - 59,999 ($2,000 USD)</td>
<td>3 (3.3)</td>
</tr>
<tr>
<td>60 K - 69,999 ($2,333 USD)</td>
<td>2 (2.2)</td>
</tr>
<tr>
<td>70 K - 79,999 ($2,666 USD)</td>
<td>3 (3.3)</td>
</tr>
<tr>
<td>&gt;= 80K ($2,667 USD)</td>
<td>2 (2.2)</td>
</tr>
<tr>
<td>Missing</td>
<td>7 (7.8)</td>
</tr>
</tbody>
</table>

As seen in Table 6, nearly 88% of participants’ wife died from diseases, yet more than half of participants did not anticipate their wife’s death. More than 80% of participants stated that past relationships with their wife was good or very good.
<table>
<thead>
<tr>
<th>Cause of wife’s death</th>
<th>Diseases</th>
<th>79 (87.8)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Accident</td>
<td>6 (6.7)</td>
</tr>
<tr>
<td></td>
<td>Suicide</td>
<td>1 (1.1)</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>3 (3.3)</td>
</tr>
<tr>
<td></td>
<td>Missing</td>
<td>1 (1.1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Anticipate wife will die</th>
<th>Yes</th>
<th>35 (38.9)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>53 (58.9)</td>
</tr>
<tr>
<td></td>
<td>Missing</td>
<td>2 (2.2)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Past relation with wife</th>
<th>Very bad</th>
<th>0 (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bad</td>
<td>2 (2.2)</td>
</tr>
<tr>
<td></td>
<td>Okay</td>
<td>13 (14.4)</td>
</tr>
<tr>
<td></td>
<td>Good</td>
<td>14 (15.6)</td>
</tr>
<tr>
<td></td>
<td>Very good</td>
<td>61 (67.8)</td>
</tr>
</tbody>
</table>

About 34% lived alone compared to 43% who lived with adult children or daughter-in-law and grandchildren (see Table 7). Two participants lived with their widowed mother in order to take care of their aged mother. Half of participants had contact with their children every day. Although many participants had contact with neighbors every day, interactions were limited to customary social greetings. Approximately half of the participants had contact with their friends less than once a year and some never.
Table 7
Living Arrangements and Marital Status: n (%)  

<table>
<thead>
<tr>
<th>Living Arrangements</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live alone</td>
<td>31 (34.4)</td>
</tr>
<tr>
<td>Live with young generation and/or their family</td>
<td>39 (43.3)</td>
</tr>
<tr>
<td>Live with companion (e.g. girl friend, wife)</td>
<td>8 (8.9)</td>
</tr>
<tr>
<td>Nursing home</td>
<td>5 (5.6)</td>
</tr>
<tr>
<td>Nursing aid/Home care aid</td>
<td>4 (4.4)</td>
</tr>
<tr>
<td>Other (e.g. Live with mother or friend)</td>
<td>3 (3.3)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Widowed (No reported girl friend)</td>
<td>73 (81.1)</td>
</tr>
<tr>
<td>Remarried</td>
<td>4 (4.4)</td>
</tr>
<tr>
<td>Domestic partner</td>
<td>3 (3.3)</td>
</tr>
<tr>
<td>Girl friend not living together</td>
<td>9 (10.0)</td>
</tr>
<tr>
<td>Missing</td>
<td>1 (1.1)</td>
</tr>
</tbody>
</table>

More than half of the participants believed in Buddhism or Taoism. However, nearly 58% of participants did not attend religious activities, and 30% attended only once a year or occasionally. Eighty-one percent of participants stated that they neither remarried nor have a female partner. Only four out of the 89 had remarried. About 80% reported at least one chronic condition (see Table 8). Hypertension, diabetes, and heart disease were the three leading conditions among the participants. About half of participants reported taking one to three prescribed medications, and 16 older widowers reported no prescribed medication.
Table 8
Self-Reported Number of Chronic Condition and Number of Prescribed Medications

<table>
<thead>
<tr>
<th>Number of chronic condition</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>18 (20.0)</td>
</tr>
<tr>
<td>1</td>
<td>34 (37.8)</td>
</tr>
<tr>
<td>2</td>
<td>25 (27.8)</td>
</tr>
<tr>
<td>3</td>
<td>11 (12.2)</td>
</tr>
<tr>
<td>4</td>
<td>1 (1.1)</td>
</tr>
<tr>
<td>Missing</td>
<td>1 (1.1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of prescribed medication</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>16 (17.8)</td>
</tr>
<tr>
<td>1</td>
<td>18 (20.0)</td>
</tr>
<tr>
<td>2</td>
<td>17 (18.9)</td>
</tr>
<tr>
<td>3</td>
<td>12 (13.3)</td>
</tr>
<tr>
<td>4</td>
<td>5 (5.6)</td>
</tr>
<tr>
<td>5</td>
<td>9 (10.0)</td>
</tr>
<tr>
<td>&gt;=6</td>
<td>9 (10.0)</td>
</tr>
<tr>
<td>Missing</td>
<td>4 (4.4)</td>
</tr>
</tbody>
</table>

Reliability of the WHOQOL-BREF Taiwan version in the study. The Cronbach's alpha was conducted to examine the internal consistency among all items in the WHOQOL-BREF Taiwan version instrument and items in each of 4 domains. For social relationships (domain 3) and environment (domain 4), the Cronbach's alpha was computed separately with and without the Taiwan national item in each domain. Therefore, there were two values for domain 3 and domain 4. The WHOQOL-BREF Taiwan version was found to be highly internally consistent (28 items; $\alpha = .91$). Cronbach's alpha for each domain was reported as following. The physical health consisted of 7 items ($\alpha = .81$). The psychological health consisted of 6 items ($\alpha = .72$). The social relationships consisted of only 3 items ($\alpha = .72$).
= .51), and the social relationship (TW) consisted of 4 items (α = .59). The environment consisted of 8 items (α = .74), and environment (TW) consisted of 9 items (α = .76).

**HRQOL (WHOQOL-BREF Taiwan version) outcomes: Dependent variables (DVs).**

The ranges, means, and standard deviations of WHOQOL-BREF outcomes were individually described for eight dependent variables (DVs): Q1, Q2, physical domain, psychological domain, social domain, social (TW) domain, environmental domain, and environmental (TW) domain.

Q1, the first general facet in WHOQOL-BREF, asks “How would you rate your quality of life?” Eighty-nine participants answered item Q1. The range of the answers was 1 (extremely poor) to 5 (extremely good). The mean value was 3.54 (SD = .87) which indicated that most participants rated their QOL between “moderately good” and “good” (see Table 9).

Q2 is the second general facet in WHOQOL-BREF and asks “How satisfied are you with your health?” All of the ninety older widowers answered item Q2. The minimum value was 1 (extremely dissatisfied) and maximum value was 5 (extremely satisfied). The mean value was 3.57 (SD = .94) which indicated that participants were between “moderately satisfied” and “satisfied.”

In the WHOQOL-BREF instrument, the physical domain consists of seven items (Q3, Q4, Q10, Q15, Q16, Q17, Q18); the psychological domain consists of six items (Q5, Q6, Q7, Q11, Q19, Q26); the social domain consists of three items (Q20, Q21, Q22); and the
environmental domain consists of eight items (Q8, Q9, Q12, Q13, Q14, Q23, Q24, Q25). In
the Taiwan version of the WHOQOL-BREF instrument, one item was generated and added to
the original social domain and environmental domain by the WHOQOL Taiwan Group in
order to make the original WHOQOL-BREF instrument better reflect the sociocultural
context in Taiwan. The customization created two additional domains: social (TW) domain
and environmental (TW) domain. Social (TW) domain consists of the original three items
(Q20, Q21, Q22) in the social domain plus another newly generated item, Q27. Item Q27
asks “How often do you feel respected by others?” Environmental (TW) domain consists of
the original eight items (Q8, Q9, Q12, Q13, Q14, Q23, Q24, Q25) in the environmental
domain plus item Q28. Item Q28 asks “How often are you able to get the things you like to
eat?”

According to the rules of score calculation (Yao, 2005), the raw score of each domain
was the sum of the item scores. The transformed score was the mean value of raw score * 4
which made the transformed domain score range from 4 to 20. The transformed domain
scores are presented and discussed in the present study. Among the six domain scores,
physical domain had the highest mean value of 14.68 (SD = 2.53); social domain presented
the lowest mean value of 13.41 (SD = 2.20). A higher score indicates a better quality of life.
The detailed mean value and standard deviation of all domains are shown in Table 9.
Table 9
*General Item Score and Transformed Domain Score in HRQOL-BREF Taiwan Version*

<table>
<thead>
<tr>
<th>Domain</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1 (overall QOL)</td>
<td>89</td>
<td>1.00</td>
<td>5.00</td>
<td>3.54</td>
<td>.87</td>
</tr>
<tr>
<td>Q2 (Health)</td>
<td>90</td>
<td>1.00</td>
<td>5.00</td>
<td>3.57</td>
<td>.94</td>
</tr>
<tr>
<td>Physical</td>
<td>90</td>
<td>7.43</td>
<td>19.43</td>
<td>14.68</td>
<td>2.53</td>
</tr>
<tr>
<td>Psychological</td>
<td>90</td>
<td>6.00</td>
<td>18.00</td>
<td>13.92</td>
<td>2.29</td>
</tr>
<tr>
<td>Social</td>
<td>90</td>
<td>8.00</td>
<td>18.67</td>
<td>13.41</td>
<td>2.20</td>
</tr>
<tr>
<td>Social (TW)</td>
<td>90</td>
<td>7.00</td>
<td>18.00</td>
<td>13.76</td>
<td>2.02</td>
</tr>
<tr>
<td>Envir</td>
<td>90</td>
<td>8.00</td>
<td>18.00</td>
<td>14.40</td>
<td>1.77</td>
</tr>
<tr>
<td>Envir (TW)</td>
<td>90</td>
<td>8.00</td>
<td>18.22</td>
<td>14.57</td>
<td>1.73</td>
</tr>
</tbody>
</table>

**Outliers.** Because the scores of Q1 and Q2 were from 1 to 5, and each domain score in WHOQOL-BREF ranges from 4 to 20, Boxplot and Stem-and-Leaf did not detect outliers in any dependent variables. Z scores were performed to detect the outliers in IVs. Three absolute values of Z scores beyond 3.29 (3.29, 4.26, 3.29) were found in self-reported numbers of medication. A value of five was incorrectly entered as 13 after checking the survey and interview recording. Two values, 16 and 13, were treated as missing data because the numbers of medications were from the participants’ nurses rather than themselves. Two participants did not know exactly how many medications they took. As the information was designed to collect “self-reported” numbers of prescribed medication, the two values should have been treated as missing data. As a result, the incorrectly entered value was corrected, and the two nurse-reported values were treated as missing data. No outliers were found in the remaining IVs.
Correlation Analysis for Specific Aim 2

Statistical assumptions. Before conducting the correlation analysis, statistical assumptions including normality, linearity, and homoscedasticity were examined. The assumption of normality was tested by examining the skewness and kurtosis as well as frequency histograms. The results indicated that the assumption of normality was not violated (Skewness < 3, Kurtosis < 3, bell-shaped distribution). Residuals plots and a scatterplot matrix of IVs with DVs were used to examine the linearity and homoscedasticity. The results indicated that the assumptions of linearity and homoscedasticity were met.

Procedures for correlation analysis. Specific aim 2 stated, “To identify related demographic variables associated with HRQOL of the target population.” Correlation analysis was conducted to examine the relationships between the demographic characteristics (IVs) and eight dependent variables (DVs). Eight DVs included two general facet scores (Q1 and Q2), four transformed domain scores (physical domain, psychological domain, social domain and environmental domain) plus two additional localized domain (social (TW) domain and environmental (TW) domain) in Taiwan version of WHOQOL-BREF instrument.

All DVs were continuous variables. Therefore, Pearson correlation analysis was used to examine the relationships between continuous IVs and DVs, and the relationships between binary IVs and DVs. Spearman’s rank-oelder correlation was used to examine the relationships between ordinal IVs and DVs. Eight continuous IVs in demographic information included...
age when interviewed, age when lost wife, years since bereaved, years of marriage, number of son(s), number of daughter(s), self-reported number of chronic conditions and number of prescribed medications. Eight ordinal IVs in demographic information included education, work type (no work, part time, full time), social welfare, total monthly income, previous relationship with wife, frequency of contacting children, frequency of contacting neighbors, and frequency of contacting friends. The frequency of participating in religious activities was not examined because the majority of participants did not or only occasionally participated in religious activities. Among nominal IVs in demographic information, only financial support from children (yes/no) was analyzed. The rest of characteristics such as ethnicity, cause of wife’s death, and participation in volunteering were not examined due to the majority of participants falling into one category.

**Findings for Q1. Overall QOL.** Pearson correlation results indicated that no statistically significant relationships were found between any of the eight continuous IVs in demographic characteristics and Q1 (see Table 10). Spearman’s rank-order correlation results indicated that none of the IVs were statistically significantly associated with Q1 (see Table 10). Pearson correlation coefficient results indicated that no statistically significant relationship was found between financial support from adult children and Q1 (see Table 10).

**Findings for Q2. Satisfaction with health.** Pearson correlation results indicated a moderate inverse and statistically significant relationship between number of chronic
conditions and Q2 (Pearson $r = -.35, p = .00$). Another weak inverse and statistically significant relationship was found between number of prescribed medications and Q2 (Pearson $r = -.24, p = .03$). A weak inverse and statistically significant relationship between age when interviewed and Q2 (Pearson $r = -.22, p = .04$) was also found (see Table 10). Spearman’s rank-order correlation analysis revealed that none of the IVs was statistically significantly associated with Q2 (see Table 10). Pearson correlation coefficient determined that no statistically significant relationship was found between financial support from children and Q2 (see Table 10).

**Findings for physical domain.** Pearson correlation analysis indicated a moderately strong inverse and statistically significant relationship between self-reported number of prescribed medications and physical domain (Pearson $r = -.53, p = .00$). Another moderate inverse and statistically significant relationship was found between age when interviewed and physical domain (Pearson $r = -.47, p = .00$). In addition, a moderate inverse and statistically significant relationship between self-reported number of chronic conditions and physical domain (Pearson $r = -.39, p = .00$) was also found (see Table 10). Spearman’s rank-order correlation analysis revealed a weak positive and statistically significant relationship between education and physical domain (Spearman’s rho = .22, $p = .04$); another weak and positive statistically significant relationship was found between frequency of participating in religious activities and physical domain (Spearman’s rho = .22, $p = .04$). None of the remaining IVs
was statistically significantly associated with physical domain (see Table 10). Pearson correlation coefficient analysis indicated no statistically significant relationship between child support in financial and physical domain (see Table 10).

**Findings for psychological domain.** Pearson correlation analysis indicated a moderate inverse and statistically significant relationship between age when interviewed and psychological domain (Pearson \( r = -.27, p = .01 \)). Another weak inverse and statistically significant relationship between self-reported number of chronic conditions and psychological domain (Pearson \( r = -.21, p = .05 \)) was also found (see Table 10). Spearman’s rank-order correlation analysis indicated a weak inverse and statistically significant relationship between previous relationship with wife and psychological domain (Spearman’s \( \rho = -.24, p = .02 \)). The question of asking previous relationship with wife used a scoring scale that was different from other questions (1 = “Very good,” 2 = “Good,” 3 = “Okay,” 4 = “Bad,” 5 = “Very bad”) but when the Spearman’s rho correlations were run, the items were inadvertently not reverse coded. Therefore that Spearman’s rho of -.24 signifies that better relationship with wife was statistically significantly correlated to better psychological health. None of the remaining IVs was statistically significantly associated with psychological domain (see Table 10). Pearson correlation coefficient analysis showed that no statistically significant relationships were found between financial support from children and psychological domain (see Table 10).
Findings for social domain. Pearson correlation analysis indicated a moderately positive and statistically significant relationship between years of marriage and social domain (Pearson r = .26, p = .02). No statistically significant relationships were found between the remaining IVs in demographic characteristics and social domain as a dependent variable (DV) (see Table 10). Spearman’s rank-order correlation analysis revealed a moderate inverse and statistically significant relationship between frequency of contacting friends and social domain (Spearman’s rho = -.28, p = .01). The question of asking frequency of contacting friends used a scoring scale that was different from other questions (1 = “Every day,” 2 = “4-6 times per week,” 3 = “1-3 times per week,” 4 = “Less than once per week,” 5 = “Never”). Therefore that Spearman’s rho of -.28 signifies that higher frequency of contacting friends was statistically significantly correlated to higher scores in social domain. None of the remaining IVs was statistically significantly associated with social domain (see Table 10). Pearson correlation coefficient analysis indicated that no statistically significant relationship was found between financial support from children and social domain (see Table 10).

Findings for social (TW) domain. Pearson correlation coefficients indicated a moderate positive and statistically significant relationship between years of marriage and social (TW) domain (Pearson r = .28, p = .01). No statistically significant relationships were found between the rest of IVs in demographic characteristics and social (TW) domain as a dependent variable (DV) (see Table 10). Spearman’s rank-order correlation analysis indicated
a moderate inverse and statistically significant relationship between frequency of contacting friend and social (TW) domain (Spearman’s $\rho = -.28, p = .01$). Similarly, higher frequency of contacting friends statistically significantly correlated to higher scores in social (TW) domain. None of the remaining IVs was statistically significantly associated with social (TW) domain (see Table 10). Pearson correlation coefficient analysis indicated that no statistically significant relationship was found between financial support from children and social (TW) domain (see Table 10).

**Findings for environmental domain.** Pearson correlation analysis indicated a moderate inverse and statistically significant relationship between self-reported number of prescribed medications and environmental domain (Pearson $r = -.25, p = .03$). Another moderate inverse and statistically significant relationship was observed between age when interviewed and environmental domain (Pearson $r = -.27, p = .01$). In addition, a moderate inverse and statistically significant relationship between years since bereaved and environmental domain (Pearson $r = -.26, p = .01$), and a weak inverse and statistically significant relationship between self-reported number of chronic conditions and environmental domain (Pearson $r = -.23, p = .03$) were found. No other statistically significant relationships were found between the remaining demographic characteristics and environmental domain (see Table 10). Spearman’s rank-order correlation analysis revealed that none of the IVs was statistically significantly associated with environmental domain (see Table 10). Pearson correlation
coefficient analysis indicated that no statistically significant relationship was found between financial support from children and environmental domain (see Table 10).

**Findings for environmental (TW) domain.** Pearson correlation coefficients indicated a moderate inverse and statistically significant relationship between self-reported number of prescribed medication and environmental (TW) domain (Pearson $r = -.28, p = .01$). Another moderate inverse and statistically significant relationship between age when interviewed and environmental (TW) domain (Pearson $r = -.28, p = .01$), and a moderate inverse and statistically significant relationship between years since bereaved and environmental (TW) domain (Pearson $r = -.28, p = .01$) were observed. Lastly, a moderate inverse and statistically significant relationship between self-reported number of chronic conditions and environmental (TW) domain (Pearson $r = -.25, p = .02$) was also found. No other statistically significant relationships were found between the remaining demographic characteristics and environmental (TW) domain (see Table 10). Spearman’s rank-order correlation analysis results indicated a weak positive and statistically significant relationship between total income and environmental (TW) domain (Spearman’s rho = .22, $p = .05$). None of the remaining IVs was statistically significantly associated with environmental (TW) domain (see Table 10). Pearson correlation coefficient analysis indicated that no statistically significant relationship was found between financial support from children and environmental (TW) domain (see Table 10).
Table 10
Correlation of 10 IVs and 8 DVs

<table>
<thead>
<tr>
<th>Q1 QOL</th>
<th>Q2 Health</th>
<th>Physical</th>
<th>Psych</th>
<th>Social</th>
<th>Social (TW)</th>
<th>Environmental</th>
<th>Environmental (TW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>.02</td>
<td>-.22*</td>
<td>-.47**</td>
<td>-.27*</td>
<td>-.10</td>
<td>-.04</td>
<td>-.27*</td>
</tr>
<tr>
<td>Educatioin</td>
<td>.03</td>
<td>.10</td>
<td>.22*</td>
<td>.16</td>
<td>.04</td>
<td>-.01</td>
<td>.20</td>
</tr>
<tr>
<td>Financial support from children</td>
<td>-.07</td>
<td>-.10</td>
<td>-.17</td>
<td>-.08</td>
<td>-.19</td>
<td>-.14</td>
<td>-.14</td>
</tr>
<tr>
<td>Total income</td>
<td>.20</td>
<td>.06</td>
<td>.17</td>
<td>.13</td>
<td>.05</td>
<td>.01</td>
<td>.21</td>
</tr>
<tr>
<td>Years since bereaved</td>
<td>.09</td>
<td>-.10</td>
<td>-.17</td>
<td>-.18</td>
<td>-.17</td>
<td>-.15</td>
<td>-.26*</td>
</tr>
<tr>
<td>Years of marriage</td>
<td>.01</td>
<td>.03</td>
<td>-.06</td>
<td>.09</td>
<td>.26*</td>
<td>.28*</td>
<td>.17</td>
</tr>
<tr>
<td>Past relationship with wife</td>
<td>.20</td>
<td>.13</td>
<td>.14</td>
<td>-.24*</td>
<td>.08</td>
<td>.10</td>
<td>.15</td>
</tr>
<tr>
<td>Freq. of contacting friends</td>
<td>.17</td>
<td>.10</td>
<td>.17</td>
<td>.08</td>
<td>-.28**</td>
<td>-.28**</td>
<td>.08</td>
</tr>
<tr>
<td>Self-reported number of chronic conditions</td>
<td>-.01</td>
<td>-.35**</td>
<td>-.39**</td>
<td>-.21*</td>
<td>-.06</td>
<td>-.11</td>
<td>-.23*</td>
</tr>
<tr>
<td>Self-reported number of prescribed medications</td>
<td>.03</td>
<td>-.24*</td>
<td>-.53**</td>
<td>-.21</td>
<td>.06</td>
<td>.08</td>
<td>-.25*</td>
</tr>
</tbody>
</table>

Note. The code for past relationship were 1 = "very good" to 5 = "very bad". The code for frequency of contacting friends were 1 = "every day" to 5 = "never"  
** Correlation is statistically significant at the 0.01 level (2-tailed).  
* Correlation is statistically significant at the 0.05 level (2-tailed).  

In summary, among the demographic information, nine IVs including age when interviewed, education, total income, years since bereaved, years of marriage, previous
relationship with wife, frequency of contacting friends, self-reported number of chronic conditions, and self-reported number of prescribed medications were found to be statistically significantly correlated to at least one DV in WHOQOL-BREF outcomes. In order to avoid multicollinearity among the IVs, correlation analysis among the nine IVs was conducted and the coefficients were presented in Table 11. As seen in Table 11, although an inverse and statistically significant correlation between Years since bereaved and Years of marriage (Pearson $r = -0.69$, $p = .00$) and a positive and statistically significant relationship between self-reported number of chronic conditions and self-reported number of prescribed medications (Pearson $r = 0.64$, $p = .00$) were moderately strong, the tolerances were checked later in multiple linear regressions. The IVs with tolerances less than or equal to 0.1 would be removed to avoid the adverse influence of multicollinearity. Therefore, all of the nine demographic IVs were still further analyzed using multiple linear regressions.
Table 11
*Correlation among 9 IVs*

<table>
<thead>
<tr>
<th>IVs</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Edu</td>
<td></td>
<td>-.33**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Total Income</td>
<td>-.10</td>
<td>.49**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Years since</td>
<td>.16</td>
<td>-.19</td>
<td>.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bereaved</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Years of</td>
<td>.44**</td>
<td>-.02</td>
<td>-.16</td>
<td>-.69**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marriage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Past relation w/</td>
<td>.07</td>
<td>.08</td>
<td>-.03</td>
<td>.15</td>
<td>-.18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wife</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Freq. of</td>
<td>.16</td>
<td>-.09</td>
<td>-.05</td>
<td>.05</td>
<td>.01</td>
<td>.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contacting friends</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Number of</td>
<td>.18</td>
<td>.07</td>
<td>.15</td>
<td>.12</td>
<td>-.09</td>
<td>.02</td>
<td>.03</td>
<td></td>
</tr>
<tr>
<td>Conditions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Number of med.</td>
<td>.33**</td>
<td>-.14</td>
<td>.10</td>
<td>.15</td>
<td>.06</td>
<td>-.09</td>
<td>.04</td>
<td>.64**</td>
</tr>
</tbody>
</table>

*Note.* **Correlation is statistically significant at the 0.01 level (2-tailed).*

* Correlation is statistically significant at the 0.05 level (2-tailed).

**Multiple Linear Regressions for Specific Aim 3**

Specific aim 3 was “to identify statistically significant demographic predictors of the HRQOL in older widowers in Taiwan.” Standard multiple linear regression was conducted to detect the predictors from the related demographic characteristics (IVs) of each dependent variable (DV). The eight DVs included two item scores in general facet (Q1 self-rated overall QOL and Q2 satisfaction with health), four transformed domain scores (physical domain, psychological domain, social domain and environmental domain) plus two additional national
domain, social (TW) domain and environmental (TW) domain, in the Taiwan version of WHOQOL-BREF instrument. Nine correlated IVs, including age when interviewed, education, total income, years since bereaved, years of marriage, previous relationship with wife, frequency of contacting friends, self-reported number of chronic conditions, and self-reported number of prescribed medications, were entered in regression analysis for each DV. Because of the potential reduced power, after the initial regression model was run, a reduced model was examined. Only the IVs from the initial regression with a standardized beta higher or equal to .30 were entered in reduced regression model.

Findings for predictors of Q1 (self-rated overall QOL). Regression results indicated that the overall model of nine IVs did not have a statistically significant amount of variance to explain Q1 (self-rated overall QOL), $R^2 = .18$, $R^2_{adj} = .06$, $F(9, 58) = 1.44$, $p = .19$. This model accounted for 18% of variance in Q1. A summary of regression coefficients is presented in Table 12. As seen in Table 12, only one variable, total income, of the nine IVs statistically significantly contributed to the model ($\beta = .35$, $p = .02$), which indicated that older widowers with higher total income had higher scores in self-rated overall QOL (see Table 12).
Table 12

Regression Results for Q1 (self-rated overall QOL)

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>β</th>
<th>t</th>
<th>p</th>
<th>Bivariate r</th>
<th>Partial r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.02</td>
<td>-.13</td>
<td>-.72</td>
<td>.48</td>
<td>.07</td>
<td>-.09</td>
</tr>
<tr>
<td>Education</td>
<td>-.03</td>
<td>-.06</td>
<td>-.37</td>
<td>.71</td>
<td>.04</td>
<td>-.05</td>
</tr>
<tr>
<td>Total income</td>
<td>.13*</td>
<td>.35</td>
<td>2.37</td>
<td>.02</td>
<td>.27</td>
<td>.30</td>
</tr>
<tr>
<td>Years since bereaved</td>
<td>.04</td>
<td>.43</td>
<td>1.93</td>
<td>.06</td>
<td>.14</td>
<td>.25</td>
</tr>
<tr>
<td>Years of marriage</td>
<td>.03</td>
<td>.42</td>
<td>1.64</td>
<td>.11</td>
<td>.04</td>
<td>.21</td>
</tr>
<tr>
<td>Past relationship with wife</td>
<td>-.08</td>
<td>-.09</td>
<td>-.72</td>
<td>.47</td>
<td>-.15</td>
<td>-.09</td>
</tr>
<tr>
<td>Frequency of contacting friends</td>
<td>-.01</td>
<td>-.02</td>
<td>-.13</td>
<td>.90</td>
<td>-.06</td>
<td>-.02</td>
</tr>
<tr>
<td>Self-reported number of chronic conditions</td>
<td>-.10</td>
<td>-.13</td>
<td>-.77</td>
<td>.44</td>
<td>-.10</td>
<td>-.10</td>
</tr>
<tr>
<td>Self-reported number of prescribed medication</td>
<td>-.00</td>
<td>-.00</td>
<td>-.02</td>
<td>.99</td>
<td>.04</td>
<td>-.00</td>
</tr>
</tbody>
</table>

* Indicates significance at \( p \leq .05 \).

A reduced regression model was conducted by entering three IVs from the initial regression with a standardized beta higher or equal to .30, total income (\( \beta = .35 \)), years since bereaved (\( \beta = .43 \)), and years of marriage (\( \beta = .42 \)) as potential predictors. Regression results indicated that the reduced model had a statistically significant amount of variance to explain Q1, \( R^2 = .13, R^2_{adj} = .09, F(3, 68) = 3.33, p < .05 \). The reduced model accounted for 13% of variance in Q1. Both total income (\( \beta = .30, p = .01 \)) and years since bereaved (\( \beta = .32, p = .05 \)) statistically significantly predicted Q1, which indicated that older widowers with higher total income and longer time since bereaved had higher self-rated quality of life. The remaining IV (years of marriage) did not statistically significantly predict Q1 (self-rated overall QOL) (see Table 13).
Table 13

Reduced Regression Model Results for Q1 (overall QOL)

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>β</th>
<th>t</th>
<th>p</th>
<th>Bivariate r</th>
<th>Partial r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total income</td>
<td>.11**</td>
<td>.30</td>
<td>2.61</td>
<td>.01</td>
<td>.27</td>
<td>.30</td>
</tr>
<tr>
<td>Years since bereaved</td>
<td>.03*</td>
<td>.32</td>
<td>2.00</td>
<td>.05</td>
<td>.12</td>
<td>.24</td>
</tr>
<tr>
<td>Years of marriage</td>
<td>.02</td>
<td>.30</td>
<td>1.85</td>
<td>.07</td>
<td>.04</td>
<td>.22</td>
</tr>
</tbody>
</table>

Note: * Indicates significance at \( p \leq .05 \)
** Indicates significance at \( p \leq .01 \)

Findings for predictors of Q2 (satisfaction with health). Regression results indicated that the overall model of nine IVs did not have a statistically significant amount of variance to explain Q2 (satisfaction with health), \( R^2 = .23, R^2_{adj} = .12, F(9, 59) = 1.99, p = .06 \). This model accounted for 23% of variance in Q2. Only self-reported number of chronic condition statistically significantly predicted Q2 (\( \beta = -.37, p = .02 \)), which indicated that older widowers with more chronic conditions were less satisfied with health (see Table 14).

Table 14

Regression Results for Q2 (Satisfaction with Health)

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>β</th>
<th>t</th>
<th>p</th>
<th>Bivariate r</th>
<th>Partial r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.01</td>
<td>-.04</td>
<td>-.21</td>
<td>.83</td>
<td>-.17</td>
<td>-.03</td>
</tr>
<tr>
<td>Education</td>
<td>.07</td>
<td>.11</td>
<td>.76</td>
<td>.45</td>
<td>.15</td>
<td>.10</td>
</tr>
<tr>
<td>Total income</td>
<td>.04</td>
<td>.10</td>
<td>.69</td>
<td>.49</td>
<td>.05</td>
<td>.09</td>
</tr>
<tr>
<td>Years since bereaved</td>
<td>.00</td>
<td>.01</td>
<td>.06</td>
<td>.95</td>
<td>-.08</td>
<td>.01</td>
</tr>
<tr>
<td>Years of marriage</td>
<td>.00</td>
<td>.01</td>
<td>.05</td>
<td>.96</td>
<td>.02</td>
<td>.01</td>
</tr>
<tr>
<td>Past relationship with wife</td>
<td>-.02</td>
<td>-.02</td>
<td>-.15</td>
<td>.88</td>
<td>-.01</td>
<td>-.02</td>
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<tr>
<td>Frequency of contacting friends</td>
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<td>.04</td>
<td>.33</td>
<td>.75</td>
<td>-.01</td>
<td>.04</td>
</tr>
<tr>
<td>Self-reported number of chronic conditions</td>
<td>-.34*</td>
<td>-.37</td>
<td>-2.34</td>
<td>.02</td>
<td>-.43</td>
<td>-.29</td>
</tr>
<tr>
<td>Self-reported number of prescribed medication</td>
<td>-.06</td>
<td>-.13</td>
<td>-.79</td>
<td>.43</td>
<td>-.36</td>
<td>-.10</td>
</tr>
</tbody>
</table>

Note. * Indicates significance at \( p \leq .05 \).
A reduced regression model was conducted by entering the IVs from the initial regression with a standardized beta higher or equal to .30, self-reported number of chronic condition (β = -.37) as the potential predictor. Regression results indicated that the reduced model of one IV had a statistically significant amount of variance to predict Q2, $R^2 = .12$, $R^2_{\text{adj}} = .11$, $F(1, 87) = 11.72, p < .01$. The reduced model accounted for 12% of variance in Q2. Self-reported number of chronic condition (β = -.35, $p = .00$) statistically significantly predicted Q2, which indicated that older widowers with more self-reported number of chronic condition were less satisfied with health (see Table 15).

Table 15

<table>
<thead>
<tr>
<th></th>
<th>$B$</th>
<th>$\beta$</th>
<th>$t$</th>
<th>$p$</th>
<th>Bivariate $r$</th>
<th>Partial $r$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of chronic conditions</td>
<td>-.33**</td>
<td>-.35</td>
<td>-3.42</td>
<td>.00</td>
<td>-.35</td>
<td>-.35</td>
</tr>
</tbody>
</table>

*Note.** Indicates significance at $p \leq .01

**Findings for predictors of physical domain.** Regression results indicated that the overall model of nine IVs had a statistically significant amount of variance to explain physical health, $R^2 = .38$, $R^2_{\text{adj}} = .29$, $F(9, 59) = 4.04, p < .01$. This model accounted for 38% of variance in physical domain. However, among nine IVs, only age (β = -.37, $p = .03$) and self-reported number of prescribed medication (β = -.34, $p = .02$) statistically significantly predicted physical domain (see Table 14), which indicated that participants with older age and more prescribed medications had lower scores in physical domain (see Table 16).
A reduced regression model was conducted by entering the IVs from the initial regression with a standardized beta higher or equal to .30, age ($\beta = -.37$) and self-reported number of prescribed medication ($\beta = -.34$) as potential predictors. Regression results indicated that the reduced model had a statistically significant amount of variance to explain physical health, $R^2 = .36$, $R^2_{adj} = .35$, $F(2, 81) = 22.86, p = .00$. The reduced model accounted for 36% of variance in physical domain. Age ($\beta = -.31, p = .00$) and self-reported number of prescribed medication ($\beta = -.42, p = .00$) statistically significantly predicted physical domain (see Table 17). The results indicated that participants with older age and/or more self-reported number of prescribed medication had lower scores in physical domain.
Table 17

*Reduced Regression Model Results for Physical Domain*

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>β</th>
<th>t</th>
<th>P</th>
<th>Bivariate r</th>
<th>Partial r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.10**</td>
<td>-.31</td>
<td>-3.26</td>
<td>.00</td>
<td>-.45</td>
<td>-.34</td>
</tr>
<tr>
<td>Number of prescribed meds</td>
<td>-.46**</td>
<td>-.42</td>
<td>-5.50</td>
<td>.00</td>
<td>-.53</td>
<td>-.45</td>
</tr>
</tbody>
</table>

Note: ** Indicates significance at $p \leq .01$

**Findings for predictors of psychological domain.** Regression results indicated that the overall model of nine IVs did not have a statistically significant amount of variance to explain psychological health, $R^2 = .21$, $R^2_{adj} = .09$, $F(9, 59) = 1.76, p = .10$. This model accounted for 21% of variance in psychological domain. No IVs statistically significantly predicted psychological domain (see Table 18).

Table 18

*Regression Results for Psychological Domain*

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>β</th>
<th>t</th>
<th>P</th>
<th>Bivariate r</th>
<th>Partial r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.10</td>
<td>-.31</td>
<td>-1.71</td>
<td>.09</td>
<td>-.16</td>
<td>-.22</td>
</tr>
<tr>
<td>Education</td>
<td>.11</td>
<td>.08</td>
<td>.51</td>
<td>.61</td>
<td>.22</td>
<td>.07</td>
</tr>
<tr>
<td>Total income</td>
<td>.24</td>
<td>.23</td>
<td>1.61</td>
<td>.11</td>
<td>.17</td>
<td>.21</td>
</tr>
<tr>
<td>Years since bereaved</td>
<td>.11</td>
<td>.41</td>
<td>1.90</td>
<td>.06</td>
<td>-.02</td>
<td>.24</td>
</tr>
<tr>
<td>Years of marriage</td>
<td>.08</td>
<td>.48</td>
<td>1.92</td>
<td>.06</td>
<td>.04</td>
<td>.24</td>
</tr>
<tr>
<td>Past relationship with wife</td>
<td>-.32</td>
<td>-.13</td>
<td>-1.08</td>
<td>.28</td>
<td>-.13</td>
<td>-.14</td>
</tr>
<tr>
<td>Frequency of contacting friends</td>
<td>.08</td>
<td>.05</td>
<td>.41</td>
<td>.68</td>
<td>-.01</td>
<td>.05</td>
</tr>
<tr>
<td>Self-reported number of chronic conditions</td>
<td>.09</td>
<td>.04</td>
<td>.26</td>
<td>.80</td>
<td>-.19</td>
<td>.03</td>
</tr>
<tr>
<td>Self-reported number of prescribed medication</td>
<td>-.36</td>
<td>-.32</td>
<td>-1.95</td>
<td>.06</td>
<td>-.27</td>
<td>-.25</td>
</tr>
</tbody>
</table>

*Note.* * Indicates significance at $p \leq .05$. 

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A reduced regression model was conducted by entering four IVs from the initial regression with an absolute value of standardized beta higher or equal to .30, age ($\beta = -.31$), years since bereaved ($\beta = .41$), years of marriage ($\beta = .48$), and self-reported number of prescribed medication ($\beta = -.32$) as potential predictors. Regression results indicated that the reduced model did not have a statistically significant amount of variance to explain psychological health, $R^2 = .11$, $R^2_{adj} = .06$, $F(4, 71) = 2.26$, $p = .07$. The reduced model accounted for 11% of variance in psychological domain. Age ($\beta = -.32$, $p = .05$) and years of marriage ($\beta = .50$, $p = .03$) statistically significantly predicted psychological domain (see Table 19). The results indicated that participants with older age, or shorter duration of marriage had lower scores in psychological domain.

Table 19

<table>
<thead>
<tr>
<th></th>
<th>$B$</th>
<th>$\beta$</th>
<th>$t$</th>
<th>$p$</th>
<th>Bivariate $r$</th>
<th>Partial $r$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.09*</td>
<td>-.32</td>
<td>-1.99</td>
<td>.05</td>
<td>-.14</td>
<td>-.23</td>
</tr>
<tr>
<td>Years since bereaved</td>
<td>.09</td>
<td>.34</td>
<td>1.72</td>
<td>.09</td>
<td>-.07</td>
<td>.20</td>
</tr>
<tr>
<td>Years of marriage</td>
<td>.09*</td>
<td>.50</td>
<td>2.26</td>
<td>.03</td>
<td>.11</td>
<td>.26</td>
</tr>
<tr>
<td>Number of prescribed meds</td>
<td>-.17</td>
<td>-.19</td>
<td>-1.54</td>
<td>.13</td>
<td>-.21</td>
<td>-.18</td>
</tr>
</tbody>
</table>

Note: * Indicates significance at $p \leq .05$

**Findings for predictors of social domain.** Regression results indicated that the overall model of nine IVs had a statistically significant amount of variance to explain social domain,
$R^2 = .28$, $R^2_{adj} = .17$, $F(9, 59) = 2.52$, $p < .05$. This model accounted for 28% of variance in social domain. Among nine IVs, five IVs including age ($\beta = -.39$, $p = .03$), total income ($\beta = .28$, $p = .05$), years since bereaved ($\beta = .55$, $p = .01$), years of marriage ($\beta = .81$, $p = .00$) and frequency of contacting friends ($\beta = -.30$, $p = .01$) statistically significantly predicted social domain (see Table 20). The results indicated that participants with older age, less total income, shorter time since bereaved, shorter duration of marriage and lower frequency of contacting friends had lower scores in social domain.

Table 20
Regression Results for Social Domain

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>$\beta$</th>
<th>t</th>
<th>p</th>
<th>Bivariate $r$</th>
<th>Partial $r$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.12*</td>
<td>-.39</td>
<td>-2.20</td>
<td>.03</td>
<td>-.01</td>
<td>-.28</td>
</tr>
<tr>
<td>Education</td>
<td>-.22</td>
<td>-.15</td>
<td>-1.07</td>
<td>.29</td>
<td>.05</td>
<td>-.14</td>
</tr>
<tr>
<td>Total income</td>
<td>.29*</td>
<td>.28</td>
<td>2.05</td>
<td>.05</td>
<td>.18</td>
<td>.26</td>
</tr>
<tr>
<td>Years since bereaved</td>
<td>.14**</td>
<td>.55</td>
<td>2.66</td>
<td>.01</td>
<td>-.01</td>
<td>.33</td>
</tr>
<tr>
<td>Years of marriage</td>
<td>.14**</td>
<td>.81</td>
<td>3.37</td>
<td>.00</td>
<td>.18</td>
<td>.40</td>
</tr>
<tr>
<td>Past relationship with wife</td>
<td>.09</td>
<td>.04</td>
<td>.31</td>
<td>.76</td>
<td>-.05</td>
<td>.04</td>
</tr>
<tr>
<td>Frequency of contacting friends</td>
<td>-.45**</td>
<td>-.30</td>
<td>-2.55</td>
<td>.01</td>
<td>-.34</td>
<td>-.31</td>
</tr>
<tr>
<td>Self-reported number of chronic conditions</td>
<td>.27</td>
<td>.13</td>
<td>.84</td>
<td>.40</td>
<td>-.00</td>
<td>.11</td>
</tr>
<tr>
<td>Self-reported number of prescribed medication</td>
<td>-.10</td>
<td>-.09</td>
<td>-.56</td>
<td>.58</td>
<td>.07</td>
<td>-.07</td>
</tr>
</tbody>
</table>

* Indicates significance at $p \leq .05$.
** Indicates significance at $p \leq .01$

A reduced regression model was conducted by entering five IVs from the initial regression with p value less than or equal to .05 and/or with an absolute value of standardized beta higher or equal to .30, age ($\beta = -.39$), total income ($\beta = .28$, $p = .05$), years since bereaved ($\beta = .55$, $p = .01$), years of marriage ($\beta = .81$, $p = .00$) and frequency of contacting friends ($\beta = -.30$, $p = .01$) statistically significantly predicted social domain.
bereaved ($\beta = .55$), and years of marriage ($\beta = .81$), and frequency of contacting friends ($\beta = -.30$) as potential predictors. Regression results indicated that the reduced model had a statistically significant amount of variance to explain social domain, $R^2 = .21$, $R^2_{adj} = .15$, $F(5, 66) = 3.59, p < .01$. The reduced model accounted for 21% of variance in social domain. Four IVs, including age ($\beta = -.39, p = .01$), years since bereaved ($\beta = .41, p = .03$), years of marriage ($\beta = .71, p = .00$) and frequency of contacting friends ($\beta = -.21, p = .05$), statistically significantly predicted social domain (see Table 21). The results indicated that participants with older age, shorter time since bereaved, shorter duration of marriage, and lower frequency of contacting friends had lower scores in social domain.

Table 21

*Reduced Regression Model Results for Social Domain*

<table>
<thead>
<tr>
<th></th>
<th>$B$</th>
<th>$\beta$</th>
<th>$t$</th>
<th>$p$</th>
<th>Bivariate $r$</th>
<th>Partial $r$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.11*</td>
<td>-.36</td>
<td>-2.27</td>
<td>.03</td>
<td>-.07</td>
<td>-.27</td>
</tr>
<tr>
<td>Total income</td>
<td>.23</td>
<td>.21</td>
<td>1.89</td>
<td>.06</td>
<td>.17</td>
<td>.23</td>
</tr>
<tr>
<td>Years since bereaved</td>
<td>.11*</td>
<td>.42</td>
<td>2.15</td>
<td>.04</td>
<td>-.08</td>
<td>.26</td>
</tr>
<tr>
<td>Years of marriage</td>
<td>.12**</td>
<td>.66</td>
<td>3.00</td>
<td>.00</td>
<td>.18</td>
<td>.35</td>
</tr>
<tr>
<td>Frequency of contacting friends</td>
<td>-.33*</td>
<td>-.22</td>
<td>-1.98</td>
<td>.05</td>
<td>-.29</td>
<td>-.24</td>
</tr>
</tbody>
</table>

*Note.** Indicates significance at $p \leq .01$  
* Indicates significance at $p \leq .05*

**Findings for predictors of social (TW) domain.** Regression results indicated that the overall model of nine IVs had a statistically significant amount of variance to explain social
(TW) domain, \( R^2 = .29, R^2_{adj} = .19, F(9, 59) = 2.73, p = .01 \). This model accounted for 29% of variance in social (TW) domain. Among nine IVs, four IVs including age (\( \beta = -.41, p = .02 \)), years since bereaved (\( \beta = .61, p = .00 \)), years of marriage (\( \beta = .88, p = .00 \)) and frequency of contacting friends (\( \beta = -.26, p = .03 \)) statistically significantly predicted social (TW) domain (see Table 22). The results indicated that participants with older age, shorter time since bereaved, and shorter duration of marriage and lower frequency of contacting friend had lower scores in social (TW) domain.

Table 22

<table>
<thead>
<tr>
<th>Regression Results for Social (TW) Domain</th>
<th>( B )</th>
<th>( \beta )</th>
<th>( t )</th>
<th>( p )</th>
<th>Bivariate ( r )</th>
<th>Partial ( r )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.12*</td>
<td>-.41</td>
<td>-2.38</td>
<td>.02</td>
<td>-.30</td>
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</tr>
<tr>
<td>Education</td>
<td>-.19</td>
<td>-.14</td>
<td>-1.01</td>
<td>.32</td>
<td>-.13</td>
<td></td>
</tr>
<tr>
<td>Total income</td>
<td>.23</td>
<td>.24</td>
<td>1.77</td>
<td>.08</td>
<td>.22</td>
<td></td>
</tr>
<tr>
<td>Years since bereaved</td>
<td>.15**</td>
<td>.61</td>
<td>2.98</td>
<td>.00</td>
<td>-.00</td>
<td>.36</td>
</tr>
<tr>
<td>Years of marriage</td>
<td>.14**</td>
<td>.88</td>
<td>3.71</td>
<td>.00</td>
<td>.22</td>
<td>.44</td>
</tr>
<tr>
<td>Past relationship with wife</td>
<td>.01</td>
<td>.01</td>
<td>.04</td>
<td>.97</td>
<td>-.09</td>
<td>.01</td>
</tr>
<tr>
<td>Frequency of contacting friends</td>
<td>-.37*</td>
<td>-.26</td>
<td>-2.30</td>
<td>.03</td>
<td>-.32</td>
<td>-.29</td>
</tr>
<tr>
<td>Self-reported number of chronic conditions</td>
<td>.13</td>
<td>.07</td>
<td>.43</td>
<td>.67</td>
<td>-.02</td>
<td>.06</td>
</tr>
<tr>
<td>Self-reported number of prescribed medication</td>
<td>.00</td>
<td>.00</td>
<td>.02</td>
<td>.98</td>
<td>.11</td>
<td>.00</td>
</tr>
</tbody>
</table>

Note. * Indicates significance at \( p \leq .05 \).
** Indicates significance at \( p \leq .01 \)

A reduced regression model was conducted by entering four IVs from the initial regression with \( p \leq .05 \) and/or with an absolute value of standard beta higher or equal to .30, age (\( \beta = -.41 \)), years since bereaved (\( \beta = .61 \)), years of marriage (\( \beta = .88 \)), and frequency of
contacting friends ($\beta = -.26, p = .03$) as potential predictors. Regression results indicated that the reduced model had a statistically significant amount of variance to explain social (TW) domain, $R^2 = .22$, $R^2_{\text{adj}} = .17$, $F(4, 73) = 5.06$, $p < .01$. The reduced model accounted for 22% of variance in social (TW) domain. Three IVs, including age ($\beta = -.39, p = .01$), years since bereaved ($\beta = .45, p = .02$), and years of marriage ($\beta = .76, p = .00$), statistically significantly predicted social (TW) domain. The frequency of contacting friends ($\beta = -.19, p = .07$) did not statistically significantly predict social (TW) domain (see Table 23). The results indicated that participants with older age, shorter time since bereaved, and/or shorter duration of marriage had lower scores in social (TW) domain.

Table 23

Reduced Regression Model Results for Social (TW) Domain

<table>
<thead>
<tr>
<th></th>
<th>$B$</th>
<th>$\beta$</th>
<th>$t$</th>
<th>$p$</th>
<th>Bivariate $r$</th>
<th>Partial $r$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.11**</td>
<td>-.39</td>
<td>-2.62</td>
<td>.01</td>
<td>-.04</td>
<td>-.29</td>
</tr>
<tr>
<td>Years since bereaved</td>
<td>.12*</td>
<td>.45</td>
<td>2.45</td>
<td>.02</td>
<td>-.13</td>
<td>.28</td>
</tr>
<tr>
<td>Years of marriage</td>
<td>.13**</td>
<td>.76</td>
<td>3.73</td>
<td>.00</td>
<td>.28</td>
<td>.40</td>
</tr>
<tr>
<td>Frequency of contacting friends</td>
<td>-.28</td>
<td>-.19</td>
<td>-1.82</td>
<td>.07</td>
<td>-.23</td>
<td>-.21</td>
</tr>
</tbody>
</table>

*Note. ** Indicates significance at $p \leq .01$
* Indicates significance at $p \leq .05$

Findings for predictors of environmental domain. Regression results indicated that the overall model of nine IVs did not have a statistically significant amount of variance to explain environmental domain, $R^2 = .19$, $R^2_{\text{adj}} = .06$, $F(9, 59) = 1.50$, $p = .17$. This model accounted for 19% of variance in environmental domain. Among nine IVs, two IVs including

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age ($\beta = -0.38, p = 0.05$) and years of marriage ($\beta = 0.62, p = 0.02$) statistically significantly predicted environmental domain (see Table 24). The results indicated that participants with older age and/or shorter duration of marriage had lower scores in environmental domain.

Table 24

<table>
<thead>
<tr>
<th>Regression Results for Environmental Domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
</tr>
<tr>
<td>----</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Education</td>
</tr>
<tr>
<td>Total income</td>
</tr>
<tr>
<td>Years since bereaved</td>
</tr>
<tr>
<td>Years of marriage</td>
</tr>
<tr>
<td>Frequency of contacting friends</td>
</tr>
<tr>
<td>Self-reported number of chronic conditions</td>
</tr>
<tr>
<td>Self-reported number of prescribed medication</td>
</tr>
</tbody>
</table>

* Indicates significance at $p \leq .05$.

A reduced regression model was conducted by entering three IVs from the initial regression with an absolute value of standard beta higher or equal to .30, age ($\beta = -0.38$), years since bereaved ($\beta = 0.34$), and years of marriage ($\beta = 0.62$) as potential predictors. Regression results indicated that the reduced model had a statistically significant amount of variance to explain environmental domain, $R^2 = 0.14$, $R^2_{adj} = 0.11$, $F(3, 75) = 4.09, p < .05$. The reduced model accounted for 14% of variance in environmental domain. Among three IVs, two IVs including age ($\beta = -0.40, p = 0.01$) and years of marriage ($\beta = 0.45, p = 0.04$) statistically significantly predicted environmental domain (see Table 25). The results indicated that
participants with older age and/or shorter duration of marriage had lower scores in environmental domain.

Table 25

*Reduced Regression Model Results for Environmental Domain*

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>β</th>
<th>t</th>
<th>p</th>
<th>Bivariate r</th>
<th>Partial r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.09**</td>
<td>-.40</td>
<td>-2.61</td>
<td>.01</td>
<td>-.20</td>
<td>-.29</td>
</tr>
<tr>
<td>Years since bereaved</td>
<td>.02</td>
<td>.11</td>
<td>.57</td>
<td>.57</td>
<td>-.25</td>
<td>.07</td>
</tr>
<tr>
<td>Years of marriage</td>
<td>.06*</td>
<td>.45</td>
<td>2.13</td>
<td>.04</td>
<td>.20</td>
<td>.24</td>
</tr>
</tbody>
</table>

*Note.** Indicates significance at p ≤ .01
  * Indicates significance at p ≤ .05

**Findings for predictors of environmental (TW) domain.** Regression results indicated that the overall model of nine IVs did not have a statistically significant amount of variance to explain environmental (TW) domain, $R^2 = .19$, $R^2_{adj} = .07$, $F(9, 59) = 1.55$, $p = .15$. This model accounted for 19% of variance in environmental (TW) domain. Among nine IVs, only one IV, years of marriage ($β = .56$, $p = .03$), statistically significantly predicted environmental (TW) domain (see Table 26). The results indicated that participants with shorter duration of marriage had lower scores in environmental (TW) domain.
A reduced regression model was conducted by entering two IVs from the initial regression with an absolute value of standard beta higher or equal to .30, age (β = -.32) and years of marriage (β = .56) as potential predictors. Regression results indicated that the reduced model had a statistically significant amount of variance to explain environmental (TW) domain, $R^2 = .13$, $R^2_{adj} = .11$, $F(2, 79) = 5.87, p < .01$. The reduced model accounted for 13% of variance in environmental (TW) domain. Two IVs, including age (β = -.36, $p = .00$) and years of marriage (β = .32, $p = .01$), statistically significantly predicted environmental (TW) domain (see Table 27). The results indicated that participants with older age and shorter duration of marriage had lower scores in environmental (TW) domain.
Table 27

*Reduced Regression Model Results for Environmental (TW) Domain*

<table>
<thead>
<tr>
<th></th>
<th>$B$</th>
<th>$\beta$</th>
<th>$t$</th>
<th>$p$</th>
<th>Bivariate $r$</th>
<th>Partial $r$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.08**</td>
<td>-.36</td>
<td>-3.06</td>
<td>.00</td>
<td>-.22</td>
<td>-.33</td>
</tr>
<tr>
<td>Years of marriage</td>
<td>.05**</td>
<td>.32</td>
<td>2.73</td>
<td>.01</td>
<td>.16</td>
<td>.29</td>
</tr>
</tbody>
</table>

*Note.* ** Indicates significance at $p \leq .01$
Table 28  
*Multiple Linear Regressions: Standardized Beta*

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</table>

*Note.* * Indicates significance at $p \leq .05$  
** Indicates significance at $p \leq .01$
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<th>Psych</th>
<th>Social</th>
<th>Social (TW)</th>
<th>Environmental</th>
<th>Environmental (TW)</th>
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<td>-</td>
</tr>
<tr>
<td>3.Total income</td>
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<td>4.Years since</td>
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<td>.66**</td>
<td>.76**</td>
<td>.45*</td>
<td>.32**</td>
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<td>7.Freq. of contacting friends</td>
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<td>-.22*</td>
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<td>8.Self-reported number of chronic conditions</td>
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<td>-</td>
<td>-</td>
</tr>
<tr>
<td>9.Self-reported number of prescribed medication</td>
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<td>-.42**</td>
<td>-.19</td>
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</tbody>
</table>

*Note.* * Indicate $p \leq .05$, ** Indicate $p \leq .01$
Content Analysis for Specific Aim 4

A single-item question was used to collect data for specific aim 4, “to identify health-related needs of older widowed men in Taiwan.” The open-ended question was, “Please identify the personal health-related needs that you have at this current time that, if met, would improve your quality of life. You may list (or name) as many as come to mind.”

Most (28%) participants responded in some way that they did not have any current health-related needs. Responses included, “No need!” “I can’t think of any.” “I don’t feel I need any.” “I am satisfied with my current life.” “I am good so far.” A number of participants (19%) hoped to remain healthy or get well from illness or chronic conditions. For example, “I hope I can remain healthy.” “I hope I can stay safe and get well from my disease.” Nearly 16% of participants stated “I don’t know what to say.” or “I don’t know how to answer this question.” and left the answer blank. A number of older widowers (13%) responded by mentioning their children such as identifying a success of a child or grandchild. For example, “I am proud of my daughter. She makes the most money among my children.” “I am grateful that my daughter-in-law treats me well.” “I can’t think of any (health-related needs). All I need is my children treat me well.” “All of my grandchildren go to college.” These older widowers were proud of their children and/or grandchildren, and indicated that they were satisfied with their life because they did not need to worry about their children and because their children treated them well. A couple of participants stated that if they needed to worry
about their children, then they would have worse quality of life. “If I need to worry about my children, my quality of life would decrease a lot!” On the other hand, a few participants expressed their worries about their children’s marriage or career. “I am worried that my daughter doesn’t want to marry although she is very independent.” “All I need is someone can help my son deal with his family issues.” A small number of participants (6%) mentioned their worries about financial situations. Only three participants considered that getting a partner in the future might improve their quality of life. One remarried participant mentioned his only son stopped contacting him after he remarried. Another participant mentioned that he was not happy because his daughter did not want to see him have a partner. The participants thought of their relationships with their children when assessing health-related needs that might be related to their HRQOL.

**Summary**

This quantitative study used WHOQOL-BREF Taiwan version to assess the HRQOL of older widowers in Taiwan. A demographic tool was designed to collect participants’ demographic information. An open-ended single-item questionnaire was employed to identify the older widowers’ health-related needs. Descriptive statistical analysis revealed that the ninety participants were interviewed at a mean age of 78.48 years and lost a spouse at a mean age of 70.03 years. The average duration of their marriage was 43.46 years. About half of participants self-identified themselves as only Taiwanese even though they were biologically
related to Han and Holo. Some participants showed confusion when asked about their self-identity in ethnicity. Most of participants received some or full education at an elementary school. Fewer than 20% still worked part time or full time. Approximately 60% did not or refused to receive financial support from adult children. More than two-thirds received financial support from a social welfare system. Most participants’ wives died from illness and the death was out of participants’ anticipation. The majority of participants had very good relationships with the wife. About one-third of participants lived alone, and the most common living arrangement was living with young generation(s) such as adult children and/or their families. Only four out of 90 participants remarried. Most participants frequently contacted their children while rarely contacting their friends. A majority of participants did not volunteer nor participate in religious activities. The leading three self-reported chronic conditions among participants were hypertension, diabetes, and heart disease.

The mean score indicated that participants’ self-rated overall QOL (Q1) was between “moderately good” and “good,” and satisfaction with health was between “neither satisfied nor dissatisfied” and “satisfied.” Among six transformed domain scores, the highest mean score was in physical domain \( M_{\text{physi}} = 14.68, \ SD = 2.53 \), and the lowest mean score was in social domain \( M_{\text{soci}} = 13.41, \ SD = 2.20 \).

Among relationships between the demographic characteristics and WHOQOL-BREF outcomes, as seen in Table 30, inverse and statistically significant correlations were found
between age and Q2 (satisfaction with health) (Pearson r = -.22, p = .04), physical domain (Pearson r = -.47, p = .00), psychological domain (Pearson r = -.27, p = .01), environmental domain (Pearson r = -.27, p = .01), and environmental (TW) domain (Pearson r = -.28, p = .01). A positive and statistically significant correlation was found between Education and physical domain (Spearman’s rho = .22, p = .04). A positive and statistically significant correlation was found between total income and environmental (TW) domain (Spearman’s rho = .22, p = .05). Inverse and statistically significant correlations were found between years since bereaved and environmental domain (Pearson r = -.26, p = .01), and environmental (TW) domain (Pearson r = -.28, p = .01). Positive and statistically significant correlations were found between years of marriage and social domain (Pearson r = .26, p = .02) and social (TW) domain (Pearson r = .28, p = .01). An inverse and statistically significant correlation was found between past relationship with wife and psychological domain (Spearman’s rho = -.24, p = .02). Inverse and statistically significant correlations were found between frequency of contacting friends and social domain (Spearman’s rho = -.28, p = .01) and social (TW) domain (Spearman’s rho = -.28, p = .01). Inverse and statistically significant correlations were found between self-reported number of chronic conditions and Q2 (satisfaction with health) (Pearson r = -.35, p = .00), physical domain (Pearson r = -.39, p = .00), psychological domain (Pearson r = -.21, p = .05), environmental domain (Pearson r = -.23, p = .03), and environmental (TW) domain (Pearson r = -.25, p = .02). Inverse and statistically significant
correlations were found between self-reported number of prescribed medications and Q2
(satisfaction with health) (Pearson $r = -.30, p = .00$), physical domain (Pearson $r = -.57, p$
$= .00$), psychological domain (Pearson $r = -.28, p = .01$), environmental domain (Pearson $r =$
$-.35, p = .00$), and environmental (TW) domain (Pearson $r = -.38, p = .00$).
Table 30

Correlated Demographic Characteristics of HRQOL

<table>
<thead>
<tr>
<th>General Facet (Q1 and Q2) and Domains</th>
<th>Statistically Significant Correlated Demographic Characteristics (p ≤ 0.05)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1 (self-rated overall HRQOL)</td>
<td>None</td>
</tr>
<tr>
<td>Q2 (satisfaction with health)</td>
<td>Age (Pearson r = -.22, p = .04), Number of chronic conditions (Pearson r = -.35, p = .00), Number of prescribed medications (Pearson r = -.24, p = .03)</td>
</tr>
<tr>
<td>Physical domain</td>
<td>Age (Pearson r = -.47, p = .00), Education (Spearman’s rho = .22, p = .04), Number of chronic conditions (Pearson r = -.39, p = .00), Number of prescribed medications (Pearson r = -.53, p = .00)</td>
</tr>
<tr>
<td>Psychological domain</td>
<td>Age (Pearson r = -.27, p = .01), Past relationship with wife (Spearman’s rho = -.24, p = .02), Number of chronic conditions (Pearson r = -.21, p = .05)</td>
</tr>
<tr>
<td>Social domain</td>
<td>Years of marriage (Pearson r = .26, p = .02), Frequency of contacting friends (Spearman’s rho = -.28, p = .01)</td>
</tr>
<tr>
<td>Social (TW) domain</td>
<td>Years of marriage (Pearson r = .28, p = .01), Frequency of contacting friends (Spearman’s rho = -.28, p = .01)</td>
</tr>
<tr>
<td>Environmental domain</td>
<td>Age (Pearson r = -.27, p = .01), Years since bereaved (Pearson r = -.26, p = .01), Number of chronic conditions (Pearson r = -.23, p = .03), Number of prescribed medications (Pearson r = -.25, p = .03)</td>
</tr>
<tr>
<td>Environmental (TW) domain</td>
<td>Age (Pearson r = -.28, p = .01), Total income (Spearman’s rho = .22, p = .05), Years since bereaved (Pearson r = -.28, p = .01), Number of chronic conditions (Pearson r = -.25, p = .02), Number of prescribed medications (Pearson r = -.28, p = .01)</td>
</tr>
</tbody>
</table>
Standard multiple regression results indicated that three overall regression models (physical health, social relationships, and social relationships (TW)) had a significant amount of variance explained by nine IVs as a full model. The remaining overall regression models did not have a significant amount of variance accounted for by nine IVs. Q1 (overall QOL) was statistically significantly predicted by total income ($\beta = .35, p = .02$). Q2 (satisfaction with health) was statistically significantly predicted by self-reported number of chronic conditions ($\beta = -.37, p = .02$). Physical domain was statistically significantly prescribed by age ($\beta = -.37, p = .03$) and self-reported number of prescribed medications ($\beta = -.34, p = .02$). Psychological domain was statistically significantly predicted by none of the nine IVs. Social domain was statistically significantly predicted by age ($\beta = -.39, p = .03$), total income ($\beta = .28, p = .05$), years since bereaved ($\beta = .55, p = .01$), years of marriage ($\beta = .81, p = .00$), and frequency of contacting friends ($\beta = -.30, p = .01$). Social (TW) domain was statistically significantly predicted by age ($\beta = -.41, p = .02$), years since bereaved ($\beta = .61, p = .00$), years of marriage ($\beta = .88, p = .00$), and frequency of contacting friends ($\beta = -.26, p = .03$). Environmental domain was statistically significantly predicted by age ($\beta = -.38, p = .05$) and years of marriage ($\beta = .62, p = .02$). Environmental (TW) domain was statistically significantly predicted by years of marriage ($\beta = .56, p = .03$) as well.

Reduced regression model results indicated that only one reduced model (psychological health) did not have a significant amount of variance accounted for by potential demographic
predictors. The remaining reduced models have a significant amount of variance explained by potential demographic predictors. Self-rated overall QOL was statistically significantly predicted by total income (β = .30, p = .01) and years since bereaved (β = .32, p = .05). Q2 (satisfaction with health) was statistically significantly predicted by self-reported number of chronic conditions (β = -.35, p = .00). Physical domain was statistically significantly prescribed by age (β = -.31, p = .00) and self-reported number of prescribed medications (β = -.30, p = .00). Psychological domain was statistically significantly predicted by age (β = -.31, p = .05), years of marriage (β = .50, p = .02), and number of prescribed medications (β = .28, p = .02). Social domain was statistically significantly predicted by age (β = -.45, p = .00), years since bereaved (β = .42, p = .03), and years of marriage (β = .73, p = .00). Social (TW) domain was statistically significantly predicted by age (β = -.45, p = .00), years since bereaved (β = .46, p = .02), and years of marriage (β = .78, p = .00). Environmental domain was statistically significantly predicted by age (β = -.40, p = .01) and years of marriage (β = .45, p = .04). Environmental (TW) domain was statistically significantly predicted by age (β = -.41, p = .01) and years of marriage (β = .45, p = .03) as well.

Therefore, as seen in Table 31, 32, and 33, the changes of statistically significant relationships from the full to the reduced models included changes between: year since bereaved and overall QOL (β = .43, p = .06); age and psychological domain (β = -.31, p = .09); years of marriage and psychological domain (β = .48, p = .06); and age and
environmental (TW) domain ($\beta = -0.32, p = 0.09$). These relationships were not statistically significant in the full models but statistically significant in the reduced models. However, the relationships between total income and social domain ($\beta = 0.28, p = 0.05$) and between frequency of contacting friends and social (TW) domain ($\beta = -0.26, p = 0.03$) were statistically significant in the full models but not statistically significant in the reduced models.

Table 3-1

*Statistically Significant Predictors of General Facet in Standard Regression and Reduced Models*

<table>
<thead>
<tr>
<th>General Facet</th>
<th>Statistically Significant Predictors</th>
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<tbody>
<tr>
<td></td>
<td>Standard Regression</td>
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<tr>
<td></td>
<td>Reduced Model</td>
</tr>
<tr>
<td>Changes</td>
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</tr>
<tr>
<td>Q1 (overall HRQOL)</td>
<td>Total income ($\beta = 0.35, p = 0.02$)</td>
</tr>
<tr>
<td></td>
<td>Total income ($\beta = 0.30, p = 0.01$)</td>
</tr>
<tr>
<td></td>
<td>Years since bereaved ($\beta = 0.32, p = 0.05$)</td>
</tr>
<tr>
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<td>Years since bereaved (+)</td>
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<tr>
<td>Q2 (satisfaction with health)</td>
<td>Number of chronic conditions ($\beta = -0.37, p = 0.02$)</td>
</tr>
<tr>
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<td>Number of chronic conditions ($\beta = -0.35, p = 0.00$)</td>
</tr>
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*Note.* (+) indicates additional statistically significant predictors in reduced models.
Table 32

Predictors of Each Domain in Standard Regression and Reduced Models

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<th>Domains</th>
<th>Statistically Significant Predictors</th>
<th>Changes</th>
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<td></td>
<td>Standard Regression</td>
<td>Reduced Model</td>
</tr>
<tr>
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<td>Age ($\beta = -.37, p = .03$)</td>
<td>Age ($\beta = -.31, p = .00$)</td>
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<tr>
<td></td>
<td>Number of prescribed medications ($\beta = -.34, p = .02$)</td>
<td>Number of prescribed medications ($\beta = -.42, p = .00$)</td>
</tr>
<tr>
<td></td>
<td>Years of marriage ($\beta = .50, p = .03$)</td>
<td>Years of marriage (+)</td>
</tr>
<tr>
<td></td>
<td>Age ($\beta = -.32, p = .05$)</td>
<td>Age (+)</td>
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<tr>
<td>domain</td>
<td>Years since bereaved ($\beta = .42, p = .04$)</td>
<td>Years since bereaved (+)</td>
</tr>
<tr>
<td></td>
<td>Age ($\beta = -.36, p = .03$)</td>
<td>Frequency of contacting friends ($\beta = -.22, p = .05$)</td>
</tr>
<tr>
<td>Social domain</td>
<td>Years of marriage ($\beta = .81, p = .00$)</td>
<td>Total income (-)</td>
</tr>
<tr>
<td></td>
<td>Years since bereaved ($\beta = .55, p = .01$)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Age ($\beta = -.39, p = .03$)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frequency of contacting friends ($\beta = -.30, p = .01$)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total income ($\beta = .28, p = .05$)</td>
<td></td>
</tr>
<tr>
<td>Social (TW) domain</td>
<td>Years of marriage ($\beta = .88, p = .00$)</td>
<td>Frequency of contacting friends (-)</td>
</tr>
<tr>
<td></td>
<td>Years since bereaved ($\beta = .61, p = .00$)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Age ($\beta = -.41, p = .02$)</td>
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<td></td>
<td>Frequency of contacting friends ($\beta = -.26, p = .03$)</td>
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</tr>
<tr>
<td>Environmental</td>
<td>Years of marriage ($\beta = .62, p = .02$)</td>
<td>No changes</td>
</tr>
<tr>
<td>domain</td>
<td>Age ($\beta = -.38, p = .05$)</td>
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<tr>
<td>Environmental</td>
<td>Years of marriage ($\beta = .56, p = .03$)</td>
<td>Age (+)</td>
</tr>
<tr>
<td>(TW) domain</td>
<td>Age ($\beta = -.36, p = .00$)</td>
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<tr>
<td></td>
<td>Years of marriage ($\beta = .32, p = .01$)</td>
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</table>
Note. (+) indicates additional statistically significant predictors in reduced models; (-) indicates only statistically significant in standard regression models.
Table 3

Comparison of Statistically Significant Predictors in Standard Regression (S) and Reduced Models (R)

<table>
<thead>
<tr>
<th></th>
<th>Q1</th>
<th>Q2</th>
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<th>Psych</th>
<th>Social (TW)</th>
<th>Social</th>
<th>Environmental (TW)</th>
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</thead>
<tbody>
<tr>
<td>Age</td>
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<td>-</td>
<td>S*R**</td>
<td>R*</td>
<td>S<em>R</em></td>
<td>S*R**</td>
<td>S*R**</td>
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Note. * Indicate $p \leq .05$, ** Indicate $p \leq .01$

Most participants did not consider that they had any health-related needs that, if met, might improve their HRQOL or stated “I don’t know how to answer your question”. However,
a number of participants mentioned their adult children. Some were proud of their children or grandchildren, and some indicated that worrying about their children could negatively affect their own HRQOL.
CHAPTER FIVE

DISCUSSION

This chapter presents (a) summary of the study and each specific aim, (b) a comparison of the results to the literature, (c) a comparison of the results to the theoretical framework, (d) discussion of cultural considerations, (e) limitations of the study, (f) nursing implications and recommendations, (g) future research needed, and (h) reflections. Finally, a conclusion of the whole dissertation is provided.

Summary of the Study

Spousal bereavement has been found to be a stressful life event (Holmes & Rahe, 1967; Ott et al., 2007; Shih et al., 2010; Sun, 2009). A majority of older adults experience spousal bereavement later in life. The dramatic loss of a spouse brings unique challenges in mental health, physical conditions, social engagement and other aspects of life, particularly among older adults (Bennett, 1998; van den Brink et al., 2004). Most research on bereavement has investigated the experience and effects of spousal bereavement among widows rather than among widowers (van den Hoonaaard, 2010). Although there are fewer older widowers than older widows, older widowers face unique challenges (Bennett, 1998; Hogstel, 1985; van den Hoonaaard, 2010). As previous findings have indicated, following spousal bereavement, older widowers face increased risk of mortality and morbidity, declining general health, and decreased social engagement (Moon et al., 2011; Shor et al., 2012; van den Berg et al., 2011;
van den Hoonard, 2010).

In addition to mortality and morbidity as indicators of overall health, health professionals increasingly emphasize health-related quality of life (HRQOL) as an important and optimal outcome of providing professional health services. HRQOL is a concept involving multidimensional facets of life and highlighting various aspects of health in a cultural context. Therefore, assessment of HRQOL is useful in identifying the overall health outcomes of individuals. Furthermore, the results of assessing the HRQOL can guide health professionals to effectively develop care plans that meet health-related needs and promote the overall health. Literature on older widows and widowers comes primarily from studies of the Western culture regarding widows and men are infrequently studied. In Taiwan there are few published studies about widowers and none in the extant literature on older widowers’ HRQOL. Therefore, to address this gap and to improve nursing knowledge and care of widowers, this study investigated older widowers’ HRQOL using the Taiwan version of WHOOL-BREF. The specific aims of this study were to (a) describe the demographic characteristics and the HRQOL of widowers 60 years of age and older living in Taiwan, (b) identify related demographic variables associated with HRQOL of the target population, (c) identify statistically significant demographic predictors of the HRQOL in older widowers in Taiwan, and (d) identify health-related needs of older widowed men in Taiwan.

Specific aim (a). To describe the demographic characteristics and the HRQOL of
widowers 60 years of age and older living in Taiwan. This study recruited 102 older
widowers living in Tainan, Taiwan. Excluding those who did not meet the recruitment criteria,
data from a sample size of 90 were analyzed. The age of the 90 older widowers ranged from
61 to 96 years with a mean age of 78.48 (SD = 7.65), a mean duration since spousal loss of
8.47 years (SD = 8.16), and a mean duration of marriage of 43.46 years (SD = 12.00). A
majority of participants had no secondary education, identified themselves as Taiwanese, did
not receive financial support from adult children, and were receiving financial support from
the social welfare system. Approximately 43.3% lived with adult children or other family,
followed by 34.4% who lived alone. Most participants stated that they had no partner (81.1%),
and only 4.4% remarried (two Taiwanese and two Mainlanders).

Approximately 80% claimed to have one to four chronic conditions. Participants (52.2%)
reported taking one to three prescribed medications. The majority of participants rated their
health-related quality of life between “moderately good” and “good,” and were “moderately
satisfied” to “satisfied” with their health. Among four domains, plus two additional domains
with national items, the physical domain had the highest mean value and social domain had
the lowest mean value. In other words, the older widowers rated their physical domain of
HRQOL slightly higher than their social domain of HRQOL.

**Specific aim (b).** To identify related demographic variables associated with HRQOL of
the target population. Analysis of the correlations between demographic information
independent variables (IVs) and HRQOL outcomes was conducted. The results indicated that age and number of chronic conditions, followed by number of prescribed medications, were the top three statistically significant demographic factors correlated with the general facet and domains of HRQOL. Among demographic marital factors, past relationship with wife was associated with the psychological domain, years of marriage was associated with the social and social (TW) domains, years since bereavement was associated with the environmental and environmental (TW) domains.

Specific aim (c). To identify statistically significant demographic predictors of the HRQOL in older widowers in Taiwan. Through conducting standard linear regression and reduced regression models, several independent variables (IVs) among demographic information were found to predict item Q1 (overall HRQOL), item Q2 (satisfaction with health), and each domain of HRQOL. Total income and years since bereavement predicted overall HRQOL (Q1); number of chronic conditions predicted satisfaction with health (Q2). The results indicated that older widowers with higher total income and longer duration of bereavement tended to have higher overall QOL. Additionally, older widowers with higher number of chronic conditions tended to have lower satisfaction with health.

For the six domains of HRQOL, results demonstrated that widowers with older age and more chronic conditions tended to have lower level of physical domain in HRQOL. Widowers with shorter duration of marriage and older age tended to have lower level of
psychological domain in HRQOL.

**Specific aim (d).** To identify health-related needs of older widowed men in Taiwan.

Results from the single item showed that a majority of participants reported no health-related needs when asked an open-ended question. However, many participants reported with enthusiasm on their adult children’s career successes and scholarly accomplishments, such as teaching in colleges, or on grandchildren’s academic performances, such as getting graduate degrees or studying at public colleges. A number of participants stated that worrying about their children could negatively impact their HRQOL. It was important to them that their children had good lives. In addition, only five participants out of 90 (6%) mentioned that they worried about their financial situation.

**A Comparison of the Results to the Literature**

The literature indicated that older widowers face unique challenges in physical and mental problems (Charlton et al., 2001; O'Connor, 2010). Physical problems included higher risk of mortality (Moon et al., 2011, Shor et al., 2012) and decreased residual life expectancy (van den Berg, et al., 2011). Mental problems included suicidal thoughts and actions (Byrne & Raphael, 1999). This study was not able to compare these factors due to using a cross-sectional design rather than longitudinal design; in addition, still married older men were not recruited in the study to compare with the widowed group. However many participants in this study verbally stated that their physical and psychological conditions
decreased following spousal bereavement. Two of the 90 participants (2%) did report having suicidal ideas or actions.

Additionally, severely impaired QOL (Ott et al., 2007), adverse social function changes (van den Hoon-aard, 2009), and decreased independence in IADL (van den Blink et al., 2004) were noted among older widowers in this study. However, research about older widowers is scarce in Western countries and more so in Taiwan (van den Hoon-aard, 2010; Sun, 2009) making comparisons difficult. This study found that some participants had difficulty cooking and housekeeping. A majority of study participants reported decreased overall QOL following spousal bereavement.

**Remarriage.** Van den Hoon-aard (2010) stated that people commonly think men remarry soon after their wives die. Among Van den Hoon-aard’s 26 participants, although many older widowers agreed with the concept that connecting with a new woman facilitates a man’s successful adaptation to widowhood, the men’s attitudes toward repartnering were diverse. The present study’s participants did not confirm the belief that most widowers remarry. A majority of participants stated that they did not intend to ever remarry. Moore and Stratton (2002) conducted a qualitative study in the United States and interviewed 51 older widowers aged 60 years or older and widowed three to six years. Only 14 out of 51 had remarried (27.5%) before the interviews and three after the interviews. The current study found a lower percentage of remarriage (4 out of 90, 4.4%). Based on answers to the open-ended question
on health needs, it may be that the participants did not remarry due to concerns about their children’s feelings, responsibilities to their children and uncertainty of how a new marriage would affect the family, financial issues, and other personal or cultural issues that need further research to understand.

The literature states that there is a common perception that widowers will remarry and have a spouse to help them. Yet, this study and others have found that may not be true. Research is needed to discover if the challenges faced by older widowers lead to neglect of the older widowers’ maintaining overall HRQOL and health outcomes.

**Social engagement.** Scholars from Western cultures have argued that older widowers face different challenges in social functioning, compared to widows, following spousal bereavement (Balaswamy et al., 2004; Bennett, 1998; Hogstel, 1985; Stelle & Uchida, 2004; van den Hoonard, 2009). The 90 participants in the current study demonstrated the lowest score in the social HRQOL domain among physical, psychological, social, and environmental domains. The social domain included three items (Q20, Q21 and Q22) and a Taiwanese national item (Q27). The three items asked the level of satisfaction with personal relationships, sex life, and the support the individual get from friends. Item Q21 which asked satisfaction with sex life had the lowest raw score ($M = 3.14, SD = .78$). This finding is understandable because the majority of participants stated that they did
not have a sex life and were neither satisfied nor dissatisfied with their sex life. No literature was found regarding the sex life among older widowers.

Item Q22, which asked satisfaction with support from their friends, had the second lowest raw score \((M = 3.20, SD = .86)\). These results confirmed the older widowers’ statements that they did not need any support from their friends. The literature also confirms a lower level of social support, but it is not clear if the reasons are the same as in this study. Questions for further exploration could be, do widowers have lower social support due to not wanting it, or is it because they have less interaction with friends than they did when their wife was living. Moreover, men in Taiwanese culture may experience social stigmatization if they admit to friends or family that they need more social support; hence, they underreport a desire for support.

Two other items were Q27 which asked how well participants felt respected by others \((M = 3.70, SD = .69)\), and Q20 which asked the satisfaction with personal relationships \((M = 3.72, SD = .67)\). The results indicated that older widowers were relatively satisfied with their personal relationships and felt respected by others. All literature addressed the domain score rather than specific single item.

A majority of participants in this study rarely contacted their friends and did not participant in volunteer activities or religious activities. This study’s findings concerning social functioning confirm the literature whereby older widowers have decreased social
engagement following spousal bereavement (Stelle & Uchida, 2004; Sun, 2009; van den Hoonoard, 2009). A number of important new findings, discussed below, were revealed among the older widowers in Taiwan. The new findings are seen in the results for demographic factors correlated to HRQOL, predictors of HRQOL, and widowers’ inability to identify health-related needs.

**Predictors of HRQOL.** In Western and other Asia countries, no study reported demographic predictors of HRQOL among older widowers. Among older adults who were not necessarily widowed, Gott et al. (2006) investigated predictors of HRQOL among older adults with heart failure in the U.K. and revealed the presence of two or more co-morbidities and the variable, “oldest old,” as predictors of lower HRQOL. Margareth et al. (2009) found that advanced age, lower income, and lower level of schooling predicted a lower HRQOL among Brazilian older adults. Sazlina, Zaiton, Nor Afiah, and Hayati (2012) studied older adults with non-communicable diseases in Malaysia and discovered that age, presence of co-morbid conditions and poorer social support predicted lower physical health of HRQOL. George, Heng, Wong, and Ng (2014) investigated determinants of HRQOL among community dwelling older adults in Singapore and found unemployment, limitations for activities, such as “unable to do housework” and depressive symptoms predicted lower HRQOL. In Taiwan, age, education, total income, number of diseases, perceived health status, and social engagement were found to predict domains of HRQOL among non-widowed older
adults (Lin, 2007; Tsai, 2006).

Although demographic factors that predict HRQOL have been determined among older adults, they have not been determined for widowers and in particular those in Taiwan as seen in Table 34. This study found new findings on demographic predictors of HRQOL including age, total income, years since bereaved, years of marriage, frequency of contacting friend, number of chronic conditions and prescribed medications. Such information can help nurses and health care providers working with Taiwanese older widowers identify those who may be at risk of impaired HRQOL, and develop appropriate interventions that facilitate maintaining or enhancing HRQOL outcomes and transitions to widowhood.
Table 34

Comparison to Predictors of HRQOL among Older Adults in Literature

<table>
<thead>
<tr>
<th>Researchers</th>
<th>Gott et al., 2006</th>
<th>Margareth et al., 2009</th>
<th>George et al., 2014</th>
<th>Sazlina et al., 2012</th>
<th>Lin, 2007</th>
<th>Tsai, 2006</th>
<th>The present study</th>
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Identifying health-related needs through an open-ended question. A second new finding from this study was that the majority of participants in this study did not report any health-related needs when they were directly asked to think of and report any needs. This result indicated that older widowers might be unclear about their needs, or they were not used to exploring, thinking about, or talking about their needs. Effective tools, such as surveys with examples, rather than an open ended question, might be needed to assess older widowers’ health-related needs. Traditional Asian cultures value indirect communication (the Board of Trustees of the University of Illinois, 2007); therefore, instead of directly asking their health-related needs, indirect communication through a survey with predetermined choices, may be more effective at discovering their health-related needs.

Bond with family and younger generation (children and grandchildren). The literature shows that among Taiwanese older adults, their offspring’s achievement is important to form meaning and value in later life, and that these reflect older adults’ successes and accomplishments (Liu, 1998; Yang, 2004; Zhong, 1995). Among older adults in Asia, Lee (2007) reported meaning and value was increased when they were able to help their children. This appears to also be true for older widowers in Taiwan.

The widowers in this study were proud of their children with good academic or career achievements. Adult children's lives were a serious concern for participants. Additionally, the majority of participants lived with and had a strong bond with their adult children or the
children’s family. Many participants had contact with their adult children every day. Although living arrangements and frequency of contacting children were not correlated to HRQOL, a number of participants stated that their HRQOL would be negatively impacted if they had to worry about their adult children. These findings confirm Sun’s (2009) conclusion that older widowers hoped their children would be accomplished and were proud of their children and grandchildren.

In the current study, findings imply that adult children have an important role regarding older widowers’ HRQOL and add new knowledge to nursing about the importance of adult children to Taiwanese older widowers’ health. Nursing interventions and health policies involving adult children could be more effective to improve or maintain older widowers’ health outcomes.

**A Comparison of the Results to the Theoretical Framework**

Meleis’s theory of transitions was used as a theoretical framework to guide the current study because spousal bereavement is a situational transition which often occurs in later life. When a wife dies, a man goes through the transition from a husband to a widower. Van den Hoonnaard (2010) concluded, "When an older man’s wife dies, he enters a foreign country, one which offers few images of what it means to be a widower” (p. 3). Spousal bereavement is an extremely stressful life event, and negative experiences may trigger sequential transitions, such as decreased overall health conditions, enrolling in a day care center, or
moving to a nursing home. The current study focused on examining the relationships of transition conditions (demographic characteristics) and transition facilitators or inhibitors.

The results of this study indicated that transition conditions, in this case demographic characteristics, predicted HRQOL. All of Meleis’s three conditions (personal, community and societal) were present in the sample of Taiwanese widowers, including one unique to this study (family). Distinguishing the conditions as facilitators or inhibitors was also demonstrated as seen in Figure 2. Among the four facilitators, total income involved two conditions described by Meleis: personal (in this study-personal income), and society (in this study-social welfare). The additional unique condition, family, pertained to adult children. Of the three inhibitors, years since bereavement and years of marriage fell into personal transition condition. Frequency of contacting friends could involve all transitional levels depending on an individuals’ intention of contacting friends, type and location of community, and society background. For example, some participants did not want to contact friends, some participants lived in communities with more access to neighbors or other older men, and some mainlanders (from mainland China) had few or no friends with similar backgrounds still alive.

Overall, the purpose of Meleis’s theory of transitions is to identify facilitators and inhibitors assisting health transitions. The theory fits the purpose of the study, to understand the transition to widowhood. The unique finding of this study, i.e., the importance of family
as a distinct condition that can facilitate or inhibit successful transitioning, may broaden the explanatory power of Meleis’s theory pending further confirmation. The theory is used in the recommendations below to inform interventions aimed at helping older widowers successfully transition from being a husband to being a widower.

**Figure 2. Demographic Predictors of HRQOL among Taiwanese Older Widowers and Meleis’s Theory of Transitions**

- **Facilitators:**
  - Total income
  - Years since bereavement
  - Years of marriage
  - Frequency of contacting friends

- **Inhibitors:**
  - Age
  - Number of chronic conditions
  - Number of prescribed medications

- **Outcomes of HRQOL**
  - Q1 (Overall QOL)
  - Q2 (Satisfaction with Health)
  - Physical domain
  - Psychological domain
  - Social domain
  - Social (TW) domain
  - Environmental domain
  - Environmental (TW) domain

**Cultural Considerations**

This study has important cultural findings found not only in the survey results, but in the process of conducting the survey. How the participants answered questions in terms of what they wanted to say, what they would not talk about, how they expressed concerns and overall HRQOL findings held important cultural implications. These implications may be critical in determining the meaning of QOL and effective interventions to assist in transitions among...
older widowers in Taiwan.

HRQOL is determined by culture and the people living in a society (National Institute of Health, 2014). People in different cultural contexts may have different concerns and priorities about their lives and thus, judge the quality of their lives using different standards. For instance, in a collective versus individualistic society, or Taiwan versus the United States, an individual’s judgment of what constitutes quality may be more affected by how they perceive themselves in light of their children’s accomplishments, versus a focus on one's individual needs. When asked an open-ended question about health-related needs, older widowers considered their children before themselves and were able to express concerns for their children’s needs over their own needs. This warrants further research as it may have important implications for nurses and other health care providers working with widowers in Asian countries.

In addition to concerns for their children, Taiwanese culture has very specific cultural views on death. Although an awareness of the death and bereavement taboos in Taiwanese culture were known by the researcher from the beginning of this study, a number of other cultural considerations were discovered during the process of data collection. These considerations including the importance of food and eating, the concepts of modesty and humility and their meaning in Confucianism and Buddhism. Also, filial piety and pride in children, and language are cultural influences that might have influenced the results of the
study. Cultural norms must be considered in forming relevant nursing interventions to assist widowers’ transition from married life to widowhood.

The discussion below includes common cultural quotes in Taiwan to better illustrate the cultural concepts. The Chinese characters are given in parentheses followed by the phonetic pronunciation in either Mandarin or Taiwanese. Mandarin has Han characters as its written form. However, Taiwanese does not have an official written language. Although Han characters can be used for a large part of Taiwanese language, it is still difficult to use Han characters to exactly interpret Taiwanese (Sun, 2009). Below are the cultural concepts important in Taiwan and how the study findings are related to each.

**Eating comes first.** This study confirmed the importance of eating in Taiwanese culture and among the study participants. Taiwanese consider eating a very important activity of daily life. The saying, “People regard food as God or heaven or the primary need (民以食為天 [mín yǐ shí wéi tiān] in Mandarin pronunciation)!” implies that food comes first (民以食為天, 2009-2012). Two other sayings that illustrate the extreme importance of food in the culture are: “Anyone who is eating should be respected as an emperor (吃飯皇帝大 [jia bn hong de dua] in Taiwanese pronunciation)!” indicates that eating is the first priority (靜宜大學中文系, n.d.) along with “People would rather eat to die, than die without eating (甘願吃乎死，不通死沒吃 [gum guan jia ho see, mn ton see bo jia] in Taiwanese pronunciation)!”. That indicates how people emphasize eating (Chang, 2011).
Accordingly, national item Q28 “Are you usually able to get the things you like to eat?” was added to the Taiwan version of the WHOOL-BREF. Item Q28 reflects the cultural importance of eating to older widowers in the current study. However, even though most of participants in this study indicated that they could get what they wanted to eat very often, some participants perceived that the “good life (好命)” was only for those older widowers who had someone, particularly a member of the younger generation, to cook for them. If older widowers needed to cook or get the food by themselves, then they interpreted this as having a “bad life (歹命).”

This finding adds information to nursing knowledge and future research about how Taiwanese older widowers highlight the importance of food and eating as a part of HRQOL. To improve the HRQOL among older Taiwanese widowers, issues surrounding meal preparation and eating should be addressed first.

**Modesty and humility.** This study confirmed the importance of modesty and humility in Taiwanese culture and among study participants. While conducting the survey interviews, some unforeseen incidents occurred with several participants that may have influenced the study results. For example, when administering the Taiwan version of the WHOOL-BREF instrument, when some participants verbally stated that they were “very satisfied” or “satisfied,” they wanted to have a lower level of the option, such as “satisfied” or “moderately satisfied,” recorded. This incident occurred most often for the item Q11, “Are
you able to accept your bodily appearance?” and item Q12, “Do you have enough money to meet your needs?” Some participants argued that only another person, not themselves, can decide or evaluate if their bodily appearance was good or acceptable. According to my own experience growing up in Taiwan, people are taught to be humble and modest, and to never promote themselves to others. Even when receiving commendation from others, the most appropriate response for the older generation would be “I am not that good” or “Thank you, you are very kind to not criticize me (你不甘嫌 [Lee mn gum heyam] in Taiwanese pronunciation).” These cultural norms imply that Taiwanese people, particularly older adults, may report a lower response than their actual situation when responding to a health assessment or survey, which may mislead health care providers or researchers to inaccurate assessment outcomes. Such information adds to nursing knowledge about the potential difficulties in assessing widowers HRQOL. Future research studies should note that sensitivity to humility and modesty is needed to detect the differences between humble and unspoken expressions among older Taiwanese adults and what is actually happening in their lives.

Additionally, religion and philosophical beliefs can also influence variations in responses related to modesty and humility. In this study all participants lived in Tainan, the oldest city in Taiwan. The first Confucius temple in Taiwan was built during the 17th Century Ming dynasty in Tainan. Historically, the Confucius temple was the first official education
institute in Taiwan with the mission of developing civilization among Taiwanese. The older
generation living in Tainan is possibly more traditional and practice Confucius philosophy.

Scholars estimated that around 80% of the Taiwan population traditionally believes in
some form of religion that may overlap with a personal belief in Buddhism, Taoism,
Confucianism, or other traditional Chinese religions (American Institute in Taiwan, 2013,
May 21). The following is an explanation of these beliefs to illustrate how modesty and
humility may have influenced participant’s responses to the survey questions in terms of
specific religious or philosophical interpretations.

**Humility in Confucianism.** Confucius honored the virtue of humility and is quoted
extensively on valuing the concept of humility. For example, two quotes demonstrate the
value of humility, “He who speaks without modesty will find it difficult to make his words
good (其言之不怍，則爲之也難。)” (Legge, 1893, para. 21) and “The superior man is
modest in his speech, but exceeds in his actions (君子恥其言而過其行。)” (Legge, 1893, para. 29). Confucius humbly evaluated himself by saying, “The way of the superior man is threefold,
but I am not equal to it: Virtuous, he is free from anxieties; wise, he is free from perplexities;
bold, he is free from fear (君子道者三，我無能焉：仁者不憂，知者不惑，勇者不懼。)” (Legge,
1893, para. 30). Valuing of the concept of humility may explain why it was difficult for this
study’s participants to answer questions on the WHOOL-BREF and why they gave one
response, but wanted another response recorded-to appear more humble.
Humility in Buddhism. Humility is considered a virtue and moral precept in Buddhist thought, as well as one of the ten sacred qualities attributed to the Buddha of Compassion (Chen, 1998-2007). The quote “Buddhist practitioners believe that only a humble mind can readily recognize its own defilements of craving (or greed), aversion (or hatred) and ignorance, thereby embarking on the path of enlightenment and liberation” (Chen, 1998-2007, para. 2) indicates that humbleness leads to enlightenment. As 57.8% of the study’s participants considered themselves Buddhists, perceptions about their body or financial state would not be reflected due to choosing what they perceived as a more humble option.

The influence of culture in general and religion and philosophy in specific were noted in this study. Magdanova (2013) indicated that many wealthy Taiwanese are humble in many aspects, such as in their house, car, and clothes. Fifty percent of this study’s participants considered that they had moderately enough money to meet their needs, while 20% reported they did not have enough. For example, a participant who was a farmer claimed that he should be considered as having no income even though he still worked part time and had some income. Accordingly, due to the possible influence of Confucianism and Buddhism, some participants would choose to minimize their actual situation compared to a non-Taiwanese participant. This finding adds information to nursing knowledge and future research that Taiwanese older adults might under-report their actual conditions in health assessments or research surveys.

Findings inform nurses, educators and researchers that potential underestimation issues may
occur when working with people from the East Asian such as China, Japan, Korea, Singapore, and Taiwan.

**Filial piety and pride in children.** In Taiwan, having children to carry the family name and take responsibility for family is very important. Traditionally, sons are expected to take care of the parents and inherit the family legacy and properties. Daughters will eventually belong to the husbands’ family after marriage. Common sayings such as “Filial piety is the top priority among all virtues (百善孝為先)” and “No descendants is the largest sin against filial piety (不孝有三，無後為大)” show the fundamental importance in Taiwanese culture for having children. Children’s successes give meaning to the life of older widowers (Sun, 2009). Similarly, many participants in the current study expressed pride in their children and grandchildren when asked the open-ended question about their health-related needs.

The phenomena of pride in the younger generation is common for most parents in all countries. However, among the older widowers in this study, the phenomena became more obvious as children became the main focus of feelings and life following spousal bereavement. In Taiwanese culture, each individual’s success is more than just a personal event, but also implies successful parenting that credits and represents a family’s honor. In addition to children’s successes, children following filial piety also a source of pride for participants. Some participants happily shared that their children cared about them, brought
food, visited them regularly, took good care of them, took them out or travelled overseas with them. This is a cultural consideration that needs further study to explore the relationship between the filial piety and the HRQOL in Taiwan.

**Gaps between languages.** The Taiwan version of the WHOOL-BREF instrument was translated from English to Han characters plus two national items were added. Although it was developed by a well-regarded group of multidisciplinary scholars and tested in many locations in Taiwan, the translated language on the survey did not seem to completely interpret the original concepts in some questions. For example, a number of participants had difficulty understanding the concept of quality of life (QOL). Some misinterpreted QOL (生活品質) as material life (物質生活) because the two terms of two concepts share three Han characters. Also, the concept of translated term (享受) for “enjoy” in item Q5, “How much do you enjoy life (您享受生活嗎)?” was perceived negatively by a number of participants. Many participants pondered awhile before answering the question. Some participants stated that their lives could not be considered “享受” because they still needed to work to earn a living, they did not have a wife or children to cook for them, or they could not travel to other countries. However, when I asked if they were happy with their lives, most of them considered they were happy with their lives. In the Taiwanese version of WHOOL-BREF, the translated term in Han, 享受, did not seem to interpret the concept of enjoy, instead, the term 享受 implied that individuals do not work hard while having plenty of good resources.
for living. The only two terms that I could think of that were close to the concept of enjoy life were “happy with life (生活快樂)” and “satisfied with life (滿意生活).” However, more research is needed to determine a term to express well-being in life regardless resources for living or working hard.

Another example of language difficulties while administering the Taiwan version of WHOOL was encountered on item Q21 “Are you satisfied with your sexual life?” A participant indicated that he was “neither satisfied nor dissatisfied (沒有滿意，也沒有不滿意)” because he had no sexual life following spousal bereavement. However, he did not see the option he wanted in the choices item, so he would rather leaving it blank rather than choosing the middle option, “moderately satisfied (中等程度滿意).” I emailed the director of the WHOQOL-Taiwan Group to ask about this issue with respect. A prompt reply was received that stated that the translation was determined by the whole group, furthermore, collected data of how Taiwanese perceive the terms were analyzed. It was normal, they said, that back-translation may slightly different from the original version. However, my findings did not indicate that the translation was fully satisfactory for the participants in this study.

In summary, cultural considerations, such as the importance of eating and food, modesty and humility, filial piety and pride in children and grandchildren, and gaps in translation and language were noted during the in-person survey interview. These cultural factors affected how older widowers responded and had a potential influence on the results of
the current study. Researchers interested in studying topics in Taiwan using surveys originally developed in the West may need to take into consideration cultural and social factors in translations in addition to language translations. Further research is needed to understand the meaning of HRQOL, health needs, and other factors for widowers in Taiwan and other Asian countries.

**Limitations of the Study**

There were several limitations in the current study. The cross-sectional design limited the ability to identify changes of HRQOL among the older widowers as time passed by. Recruitment of participants used convenience sampling which restricted the representation of the target population. All participants were from Tainan, the oldest city in Taiwan. Therefore, the results could not be generalized to Taiwanese older widowers living in other cities. Additionally, none of the Hakka people, who form 15% of the overall Taiwanese population, participated in the current study. As previous studies from the U.S. and Taiwan stated, older widowers are few in number, hard to locate, and show limited interest in participating in research (Moore & Stratton, 2002; Sun, 2009; van den Hoomaard, 2010). Thus, older widowers who were willing to participate in the current research might be less typical in their experiences of widowhood than other older widowers in Taiwan. In addition, the cultural considerations such as humble and modest responses and the language gap are also limitations of the present study, as discussed in detail above. Also noted above, scores on
selected items of the Taiwanese version of WHOQOL-BREF may be misleading due to translation and participant understanding. Therefore, using the standardized HRQOL instrument created limitations in discovering individuals' concerns beyond the instrument items. A qualitative study of the recorded interviews, or through participant observation, could add further nursing science by more fully describing participants' experiences of widowhood.

Another limitation was regarding the Familywise error rate. Due to 8 standard regressions and 8 reduced regressions run to identify the statistically significant demographic predictors, the likelihood of a type I error (α = .05) was increased 16 times. Therefore, the Bonferroni correction was conducted to produce a new significance alpha level. The new α level divided 0.05 by 16 resulting in a new significance level of 0.003125. As a result, for standard regressions, only the physical full model had a significant amount of variance explained by 9 IVs, and only years of marriage statistically significantly predicted social and social (TW). In reduced regression models, only 3 reduced models including satisfaction with health, physical health, and social (TW) had a significant amount of variance explained by potential predictors. Number of chronic conditions significantly predicted satisfaction with health (β = -.35, p = .001). Age (β = -.31, p = .002) and number of prescribed medications (β = -.42, p = .000) significantly predicted physical health. Years of marriage significantly predicted social (TW) domain (β = .76, p = .000). Age significantly predicted environment
(TW) ($\beta = -.36, p = .003$).

**Nursing Implications and Recommendations**

This study has implications for nursing practice, nursing education, health policy, and widowers’ families. These implications are described in the following section along with recommendations for each aspect.

**Recommendations for nursing practice.** The results of this current study indicated that older widowers reported to have a relatively lower level of HRQOL in the social domain than the other domains following spousal bereavement. In addition, older widowers were less likely to participate in community health-related activities. The investigator was invited to attend a health promotional activity in a community center and spoke to community residents about the study and the desire to recruit older widowers as research participants. However, no older widowers participated in the community center activity. An older woman told the investigator that one of her neighbors was an older widower and that he did not attend the community center. These results reveal a potential opportunity for health professionals to rethink how they reach out to older widowers when they choose not to approach health care services (see recommendations).

Nurses should be aware of and sensitive to the possibility that older widowers may be less likely to explore their health-related needs or seek health care services due to the past dependence on their wives and socio-cultural factors. Many participants relied on their adult...
children to bring them to visit physicians. One participant who had not visited any physician for more than 10 years since his wife died reported: “It was always my wife who pushed me to see a doctor when I was ill.” Therefore, community health nurses should be aware that men may not be getting the help they need in making a successful transition to widowhood. Additionally, nurses who work with older adults should be aware that widowers with older age, more chronic conditions, more prescribed medication, lower income, shorter period of bereavement, and shorter duration of marriage might be at higher risk of having impaired HRQOL.

To identify widowers and to increase the care older widowers receive in Taiwan, the nurses who previously cared for a dying wife and usually made a discharge plan, could follow-up with older widowers’ health conditions and health-related need months after spousal bereavement. Another option would be for these nurses to make a referral to a social agency whose mission is to case-find people in need of health care.

A stable connection between community health nurses and hospital nurses could facilitate follow-up on older widowers living in community. A well-developed health care team involving professionals from multiple disciplines, such as nurses, social workers, and psychologists, could coordinate efforts to provide professional services to meet the older widowers’ health-related needs. Furthermore, the older widowers who participated in the current study tended to report no health-related needs when they were directly asked to
recount any needs. The finding of no reported health-related needs indicated that health professionals may need novel or more culturally sensitive strategies to identify older widowers’ health-related needs. Assessment questions may benefit from asking about specific health practices and needs: What do you eat for your meals? How do you go grocery shopping? How often do you have health examinations? How do you deal with your health issues if there are any? What social activities have you participated in during the last week? What hindered your participation? What would make it easier for you to participate? Asking these specific questions will avoid asking a general question such as “what are your needs” that this study shows widowers may not have an answer for.

**Recommendations for nursing education.** One nurse who helped recruit participants for this study expressed that she felt uncomfortable mentioning spousal bereavement to her patients, and she even worried that mentioning spousal bereavement would hurt the older widowers. The nurse stated, “I felt I should not ask the older men about their wives when I saw tears in their eyes.” This concern was not present in the social workers who also helped with recruitment. The difference may indicate that nurses were not adequately prepared to approach or take care of bereaved clients and that nursing school should include preparation for working with widowers. The more nursing students learn about the older widowers in a society were talking about death is taboo, the more capable they will be to provide appropriate care to older widowers in their future careers. In addition, nursing education
could foster the attitudes and ability needed among nurses to provide culturally competent nursing care using the findings from this study. Through nursing education, nursing students could learn more about Taiwanese or other cultural norms about death and bereavement leading them to be sensitive to the cultural norms and cultural considerations that directly impact HRQOL.

It is necessary to teach nursing students how to approach the bereaved individual so eventually they are able to appropriately communicate and assess their needs. Curriculum related to bereavement care will prepare nursing students in their future career to provide appropriate nursing care to bereaved clients. The findings of the current study could be added to nursing curriculum related to gerontology care so that nursing students can gain more understanding about older widowers. In the gerontological nursing courses, nursing students should be taught how to approach and take care of older widows and widowers with specific culturally based strategies such as initiating the relationship with older widowers by asking older widowers’ life story or about their children and grandchildren; assessing older adults’ satisfaction with meal and any challenge of meal preparation. In addition, learning more about how the cultural norms affect the older widowers and how to approach widowers could include findings from this study. For instance, findings indicated that older widowers expressed themselves with modesty and humility. Nurse educators could use this understanding to teach students to pay additional attention to distinguish humble expressions
from real situations when communicating with older adults. Understanding and respecting
different culture views is fundamental to delivering quality health care and service (Purnell &
Paulanka, 2008). Strategies for increasing cultural knowledge could include a field trip or
volunteer service at an elder day care center, a nursing home, or a park where older adults
often hang out. Watching elderly-related movies may also help nursing students learn more
about older adults including older widowers.

Continuing education for clinical nurses and nurse educators is also needed. Findings
from this study and others suggest that nursing students and nurses should be aware that tears
are a sign of inner pain and sadness, and a natural expression of human’s feelings. Crying as
one of “many wondrous built-in healing mechanisms” is one of many ways of releasing
sadness; let individuals cry till the last tear will help them feel released (Köbler-Ross &
Kessler, 2005, p. 42). Therefore, nurses should recognize tears as a natural expression of
clients and learn to see it without fear while assessing the bereaved individuals’ overall health
and health-related needs.

**Recommendations for health policy.** The Taiwanese government launched the National
10-year Long-term Care Plan in 2007 to take care of a rapidly growing older population
(Executive Yuan, 2014). The plan provides assistance for daily living to older adults with
functional limitations. The criteria include (a) people aged 65 years or older, (b) indigenous
people aged 55 years or older living in mountain areas, (c) handicapped people aged 50 years
or older, and (d) older adults living alone who need help with instrumental activities of daily living (IADL). The Plan provides home care service such as meal delivery and transportation may benefit disabled older adults. However, some older widowers who are not qualified to be in the program might also need assistance with activities such as cooking and housekeeping.

Due to the cultural consideration of “eating comes first,” which stresses the importance of food in the daily life of elder Taiwanese, health policies that meet older widowers nutritional needs may help those older widowers who could not cook or get meals conveniently as well as those who are low income and may not be able to afford good food. Meals-on-the-wheels in the U.S. could be an example of a policy that meets some older widowers’ needs. Weekly meals offered in a community center may provide opportunities to engage older widowers in the centers and facilitate social engagement.

Traditionally, birthday celebrations are an important event for older adults in Taiwan. Children often celebrate parents’ birthday by treating them in a restaurant or holding a banquet treating relatives. The community center could provide a monthly healthy banquet to celebrate older widowers’ birthdays. Thereby, older widowers would have more opportunities to interact with people and eat well.

**Recommendations for older widowers’ families.** According to the findings from the current study, a majority of participants lived with adult children or other family. Of all types
of living arrangements, 50% reported contacting their children every day. The findings indicated that many older widowers’ relationships with their adult children and other family were very important. However, no item in the Taiwan version of WHOOL-BREF instrument asked about the relationship between the responders and their family members. A number of participants mentioned their pride in adult children and/or grandchildren. According to participants, they mostly appreciated their adult children for taking care of, or caring about them. The lack of a question related to this may be a limitation to the use of the tool in Taiwan.

Adult children encountered in this study seemed to be very protective of their widower father. For example, one daughter did not allow her father, Mr. A., to take an airplane to go traveling because the father has hypertension, whereas the participant really hoped to travel overseas. Another example was that a daughter did not let her father, Mr. B., to take any phone calls in order to prevent possible him from being subject to fraud. The two daughters may be trying to protect their fathers; however, their methods of protection may interfere in the father’s freedom to choose leisure activities or social interactions, and thus, to cope with their bereavement.

In addition, the family should be aware that some older widowers might have suicidal intention or actions. Another participant, Mr. C., recalled that he attempted to commit suicide by eating only small amounts of rice porridge the first month following spousal bereavement.
Mr. C. threw away the food his children brought him and did not let the children know his suicidal intention. These examples indicated that older widowers did not get appropriate attention and care during their transition to widowhood.

Older widowers’ adult children need to learn more about what their widowed fathers think and need so they can help him overcome challenges caused by spousal bereavement and smooth the transition to widowhood. Regular visits bringing older widowers’ favorite food may please them and meet the needs of eating, however children need to make sure the food is actually eaten and not thrown away. Adult children and family members should be sensitive to the older widowers’ emotions, be alert to older widowers potential for suicidal intentions and obtain assistance in assessing the mental health of their fathers.

Adequate protection for preventing older widowers from fraud without interfering in socialization may be needed. Over protection, such as setting restrictions on older widowers’ activities, may negatively impact their quality of life. In addition, the implications of this worrying about fraud is- recruitment for future research and possible interventions to help men and families differentiate opportunities that are real and useful from those that are false and harmful.

An older widower who was a retired teacher claimed himself as “living idiot (生活白癡)” which meant that he did not know how to cook or do any other house work. Positive examples illustrate the kinds of recommendations and education for family members may be
needed. For instance, one participant’s children hired a home care aid to take care of him so the older widower did not need to worry about any house work such as cooking or laundry. Additionally, his son and daughter-in-law came to have dinner with the bereaved father and kept him company for a few hours every evening during the first year of spousal bereavement. The older son of another participant living in a nursing home visited the widowed father during meal time and spent a couple of hours with the participant every evening. Both participants were pleased that their children came to have dinner with them every day even though the children did not live with them. On the other hand, one participant complained that his son or daughter-in-law never came to ask him how he was even though they live together.

Sincere interactions to show caring about the older widowers are more important than formally living together. It is the time spending together with quality interaction matters. A brochure with guidelines of how to take care of older widowers as family should be developed. Hospital nurses could discuss with older widowers’ family about appropriate attention and care for older widowers. Suggestions such as regularly eat dinner with older widowers or bring favorite food to visit older widowers could be provided to the family.

**Future Research**

This study was the first step in exploring and understanding HRQOL among Taiwanese older widowers. The findings increased nursing knowledge about older widowers’ HRQOL
and the correlated demographic factors and predictors, as well as how older widowers responded to an open-ended question directly asking their health-related needs. It also discovered several areas that warrant further investigation as indicated below.

**Recommendations for future research.** Recommendations for further research come from the literature review and this dissertation’s research findings. If the purpose is to better understand and respond to older widowers in Taiwan, the first step for this researcher would be to do an in-depth analysis of the qualitative data obtained from the audio recorded interviews to explore and describe the multiple dimensions of the older widowers’ lives.

Other topics include:

1. **Research ethics and bereavement studies.** People, including this study’s recruiters and participants’ family, worried that participating in the study might negatively impact the participants in their peaceful ongoing life. Traditionally, Taiwanese people avoid mentioning events related to bereavement. A common cultural assumption is that making older widowers recall their wives and sad memories is cruel or maybe even harmful. Therefore, it is important to investigate how the participants evaluate the experience of participating in bereavement-related research. In addition, recruiters and participants’ families may worry less if evidence-based research findings indicate that participation in bereavement-related studies is less likely to harm the bereaved individuals or even benefit the participants. Future studies investigating participant
feedback and experiences about participating in the bereavement-related studies, or other studies, may help clarify the benefits and potential harm, if any exist.

2. Qualitative studies investigating the concept of HRQOL are needed in addition to using the well-verified Taiwan version of WHOOL-BREF. This study found that many participants had difficulty understanding the meaning of the concepts or terms such as quality of life. Participants seemed to describe what they perceived of as quality of life using six concepts: (a) eating, (b) clothing, (c) living environment, (d) transportation, (e) relationships with children, friends and relatives, and (f) participation in social activities. Therefore, rather than the four domains originated from Western culture and used by the WHOOL-BREF: physical, psychological, social, and environmental, it would be useful to conduct research on the concepts suggested by this study’s participants.

In addition, participants had difficulty understanding and answering several (9 out of 28) questions. For example, item Q5 asked “How much do you enjoy your life?” Participants had various interpretations about “enjoy life.” This concept of enjoying life does not translate into Taiwanese like it does into Mandarin Chinese and like the concept quality of life, may not accurately measure what it intends to measure. Other examples of potential translational problems include:

Item Q6 asked “To what extent do you feel your life to be meaningful?” Many participants asked what ‘the meaningful life’ means. Again this concept may not
translate language or culturally to Taiwanese.

Item Q11 asked “Can you accept your bodily appearance?” Some participants argued that they could not judge their own bodily appearance. The idea that an individual makes such judgments may be culturally based.

Item Q13 asked “How available to you is the information that you need in your day-to-day life?” A number of participants requested an explanation for the term “information.” Again, they did not understand what the question meant.

Item Q20 asked “Are you satisfied with your interpersonal relationships?” Many participants did not understand the term “interpersonal relationships” and asked for clarification.

Item Q21 asked “How satisfied are you with your sexual life?” Most participants reported they did not have a sexual life and could not find a suitable option on the survey. Some participants could merely accept, but were not comfortable with, the option of “moderately satisfied” when asked if they were bothered by having no-sex life. However, one participant who considered he was “neither satisfied nor dissatisfied” with his sexual life insisted to leave the answer blank because he could not accept the option of “moderately satisfied” with his sexual life which did not fit his perception.

Item Q22 asked “How satisfied are you with the support you get from your
friends?” Many participants indicated that they did not have friends; some participants asked what kind of support the question meant; some participants perceived “support” as only “financial support” and replied that they did not need money from their friends; a few participants stated that they did not need any friends. These findings indicated that a number of participants may rely on family over friends and value helping or spending time with their family more than being with friends.

Participants had difficulty distinguishing the word “ability” in item Q17 “ability to perform your daily living activities” and item Q18 “ability to work.” For many participants, their work was to perform their daily living activities.

As a well-verified self-administered survey, items in the Taiwan version of WHOOL are supposed to be easily understood and similar to the Western versions. However, participants in the current study did not easily understand the concepts and terms in the instrument. It was possibly because many participants in the current study had less education and lower level of linguistic ability. Lower linguistic and literacy levels creates gaps between Taiwanese and Han characters used in the tool. The Han characters are mainly the written form of Mandarin (spoken form) and, at times, could not perfectly interpret the Taiwanese as a spoken language.

People living in different cultural contexts may interpret and perceive QOL in different ways. The development of a local instrument for assessing Taiwanese
HRQOL should be considered in order to identify regional HRQOL and health outcomes. Or, an instrument specifically for Taiwanese older adults from a variety of socioeconomic groups may be needed as well.

3. Tool development for assessing health-related needs among Taiwanese older widowers. Future studies addressing how to effectively assess the health-related needs of older widowers are needed because most participants in the current study did not report or identify their health-related needs when given the opportunity with the direct open-ended question. The lack of response could be due to general cultural norms and those for men. Traditionally, Taiwanese men are taught to suppress their feelings and need for help. My father always told my boys “Don’t cry as a boy!” Actually, a common phenomenon of suppressing the emotions and feelings among men still exist in Taiwan (Hung, 2013; Tsai, 2012). Some Taiwanese men still believe that men should suppress their emotions such as crying (Liu, 2013). “Men do not show their tears even though they have tears (男兒有淚不輕彈)” is another example of encouraging men to not cry even though men are tearful (Liu, 2013).

4. Nursing interventions to facilitate transitions from marriage to widowhood for older men. The final purpose of bereavement research is to provide effective interventions that are beneficial to the transition to widowhood. Therefore, intervention research to maintain or promote HRQOL and overall health outcomes among older widowers is
needed.

**Recommendations for interview process to improve accuracy of open-ended responses.** As noted, older widowers were reluctant to answer certain questions. Strategies for effective communication with older widowers are needed so that older widowers are willing to share more with the interviewers. The following strategies are suggested:

1. **Active listening.** Interviewers in all cultures should show interest in listening to the participant. Non-verbal postures such as nodding head and responding with “un hum” may motivate the participant to share more about his thoughts.

2. **Avoid interrupting while the participant is talking** is also important in all cultures especially with older adults who may need time to express themselves. At times the older widowers may share something not directly related to the interview questions. Do not rush to stop the participant’s talking. When the participant pauses after a section, repeat the question to confirm that the participant understands the question. Something may be related to the interview question from participants’ perspective whereas the interviewer may not perceive it as important or related.

3. **Indirect communication.** In some situations such as Taiwan, direct expression may be considered offensive for older widowers and may negatively impact proceeding interview. Therefore, indirect communication by beginning with less sensitive topics such as older widowers’ past experience, life story, or their children and grandchildren
may help building a relationship between the participant and the interviewer. Sun (2009) also suggested using indirect communication strategies when inviting older widowers to participate in research.

**Recommendations for participant recruitment.** In regard to recruitment, the investigator realized how sensitive the subject of spousal bereavement was within Taiwanese society after experiencing the difficulties of recruiting older widowers as a research target population. When asking personal contacts if they knew any older widowers, a common response was “Are you introducing partners to the older widowers?” Another common thought from people about “new partners” was, most women looking for older widowers as partners are trying to get the older widowers’ money. These thoughts possibly form an impression that older widowers seem to be vulnerable. During the interviews, the investigator was told about incidents where older widowers were cheated on by their new partners and lost their money. As a result, some older widowers become alert and defensive whenever strangers approached to them. They and or their children may suspect that the research was a fraud or a trap that might potentially harm them. The following suggestions focus on culturally appropriate recruitment strategies for older Taiwanese adults and are provided based on the experiences of this study’s researcher:

1. Look for recruiters who may know some older widowers, or their adult children, and are familiar with potential participants, in other words, those familiar with the
community where you are working. Physicians, nurses, social workers, community center members or volunteers are possible recruiters who may know potential participants and who are trusted by potential participants.

2. Recruit older men regardless of whether they are widowed or not. The most frequent challenge reported by this study’s recruiters was to ask if the wife is still alive which could be considered offensive in Taiwanese culture because bereavement is taboo. An alternative way to avoid asking the sensitive question is to recruit older men regardless the marital status. In such a way, researchers will be able to compare older widowers’ HRQOL and overall health outcomes to older men with other marital status, and ask bereavement-related questions only to older widowers. Ask for permission to contact in the future for potential future research that is more sensitive and needs deeper relationships.

I was frequently asked why I was only studying widowers and not both widows and widowers. This question might imply that people could not understand why older widowers needed to be studied, and why older widows were excluded in my study if widowed women also had bereavement related needs. Exclusion of older widows seemed to make the present research sound suspicious which might have made potential participants hesitate to participate in the present study. Future studies recruiting both widowed men and women could be considered in order to decrease potential participants’ worries and doubts.
Most of the older widowers who participated in the current study might have been willing because they trusted the recruiters. Many participants stated that they won’t participate in the research without the recruiters’ request, which also means that they won’t participate in a research through a research recruitment flyer. Older widowers might feel less worried about participating in a study recruiting older men rather than just widowed men, or both widow and widowers, because a study only recruiting widowed men sounds suspicious to them. Since bereavement is taboo in Taiwanese culture, a study with bereavement in the title is also sensitive and lead to additional difficulty recruiting participants.

**Reflections**

As a novice researcher I unconsciously fell into some traps in the beginning, but realized my errors later on. I learned many lessons during the process of completing the dissertation.

For instance, during statistical analysis, I found some missing data and outliers. As a novice researcher, I admitted that I did not feel comfortable with missing data and the outliers although the statistics textbooks had taught me how to deal with them. I eventually realized I should examine the meaning behind the missing data and outliers. For example, two participants who lived in nursing homes had 13 to 16 prescribed medications. However, the two participants actually did not know how many prescribed medications they were taking. I did not feel comfortable with leaving the answer blank; therefore, I asked the nurses how many prescribed medications the participants were taking. However, for most participants
living at their own home, the answer was a self-reported number of prescribed medications. I should have left the answer for the nursing home residents blank because the participants did report the answer, “I don’t know.” Rather than digging into the answer to a question, I could have been exploring questions such as: why did the participants not know their prescribed medications? And why did they have so many prescribed medications? Although these questions were not part of my current study, they could be investigated in the future by researchers who are interested in such issues. When I realized my error, I corrected the data and reran the statistical analysis.

As noted, there were some problems in my data set. Some missing data and outliers should be expected (Mertler & Vannatta, 2005) because the data were from a real world setting. Studying self-perceived or subjective concepts differs from studying vital signs such as heart rate or blood pressure. Therefore, extreme values as outliers should be expected to occur in a data set related to subjective thoughts and should be respected as well because individuals may have extremely different perceptions even for the same event. In the current study, two outliers in the number of prescribed medication were deleted because the data was, as indicated, from the nurse rather than the participant. Furthermore, I was concerned about why the two participants had so many prescribed medications and why they did not know how many medications they took. There could be some potential issues with prescribed medications and how they answered the questions. In hindsight I may not have chosen to
include nursing home participants since their living situation and potentially overall health was so different from the other participants.

No single method can perfectly investigate a research problem. Quantitative methodology and qualitative methodology offer unique pros and cons. A well-developed instrument provides the researcher an effective tool to objectively measure a phenomena or concept. Numbers concretely depict any differences in comparisons or changes, and suggest a trend and common characteristics among a target population. In the current study, the WHOOL-BREF instrument revealed a relatively lower level of HRQOL in the social domain than other domains such as physical, psychological, and environmental domains. The instrument provided a guideline and framework to collect needed information. The demographic tool explored some common demographic characteristics among older widowers in Tainan, Taiwan. But the WHOOL-BREF could not detect some culturally relevant concerns and priorities among Taiwanese older widowers. Findings from qualitative methods could provide a macro view of the factors important to older widowers, providing a view of the whole forest rather than a single tree. This larger view could provide information for developing a more culturally accurate QOL tool.

Qualitative methods, such as in-depth interviews, explore the phenomena or experience of an individual as a whole person. In the current study, I conducted in-person interviews to administer the survey and listen to the participants’ opinions and feelings beyond the
five-point Likert scale response set. Although this information has not yet been analyzed, I consistently gained new understandings and was impressed at the widely variety of thoughts and feelings among the older widowers. Through the current research, I realized that each older widower is a unique individual with unique experiences, thoughts and feelings. Facing spousal bereavement, most participants felt extremely sad and that their lives were greatly impacted, whereas a few participants considered spousal loss as a natural event in life and seemed to just accept the event calmly.

I appreciate my participants’ willingness to share their life stories with me, a stranger. I learned how bravely some older widowers overcame the challenges in transitioning, as one participant stated, from a “well taken care of husband” to a “lonely older widower.”

I hope the current study is like a stone thrown in a pond making waves that will eventually encourage more researchers, nurse educators, families, and health professionals to assess and care for older widowers as a unique population. Although a small step, the accomplishment of the current study provides an underpinning for future research that will build knowledge to help promote the HRQOL among the older widowers in Taiwan.
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Appendix A

Institutional Review Board Certification of Exemption

On Jan 17, 2013, at 5:06 PM, <irb@wsu.edu> wrote:

MEMORANDUM
TO: Janet Katz, Melvin Haberman and Yi-Hsiu Liu,
FROM: Malathi Jandhyala, Office of Research Assurances (3005)
DATE: 1/17/2013
SUBJECT: Certification of Exemption, IRB Number 12948

Based on the Non-exempt Application submitted for the study titled "Older Widowers in Taiwan: Exploring Older Men's Health-related Quality of Life following Spousal Bereavement," and assigned IRB# 12948, the WSU Office of Research Assurances has determined that the study satisfies the criteria for Exempt Research at 45 CFR 46.101(b)(2).

This study may be conducted according to the protocol described in the Application without further review by the IRB.

It is important to note that certification of exemption is NOT approval by the IRB. You may not include the statement that the WSU IRB has reviewed and approved the study for human subject participation. Remove all statements of IRB Approval and IRB contact information from study materials that will be disseminated to participants.

This certification is valid only for the study protocol as it was submitted to the ORA. Studies certified as Exempt are not subject to continuing review (this Certification does not expire). If any changes are made to the study protocol, you must submit the changes to the ORA for determination that the study remains Exempt before implementing the changes (The Request for Amendment form is available online at http://www.irb.wsu.edu/documents/forms/rtf/Amendment_Request.rtf).

Exempt certification does NOT relieve the investigator from the responsibility of providing continuing attention to protection of human subjects participating in the study and adherence to ethical standards for research involving human participants.

In accordance with WSU Business Policies and Procedures Manual (BPPM), this Certification of Exemption, a copy of the Exemption Determination Application identified by this certification and all materials related to data collection, analysis or reporting must be retained
by the Principal Investigator for THREE (3) years following completion of the project (BPPM 90.01). This retention schedule does not apply to audio or visual recordings of participants, which are to be erased, deleted or otherwise destroyed once all transcripts of the recordings are completed and verified.

You may view the current status or download copies of the Certified Application by going to https://myresearch.wsu.edu/IRB.aspx?HumanActivityID=37122

Washington State University is covered under Human Subjects Assurance Number FWA00002946 which is on file with the Office for Human Research Protections (OHRP).

Review Type: New
Review Category: Exempt
Date Received: 1/15/2013
Exemption Category: 45 CFR 46.101 (b)(2)
OGRD No.: N/A
Funding Agency: N/A

You have received this notification as you are referenced on a document within the MyResearch.wsu.edu system. You can change how you receive notifications by visiting https://MyResearch.wsu.edu/MyPreferences.aspx

Please Note: This notification will not show other recipients as their notification preferences require separate delivery.
MEMORANDUM
TO: Janet Katz, Melvin Haberman and Yi-Hsiu Liu
FROM: Patrick Conner, Office of Research Assurances (3005)
DATE: 8/15/2013

The IRB staff have evaluated the proposed amendment to the Exempt study, "Older Widowers in Taiwan: Exploring Older Men's Health-related Quality of Life following Spousal Bereavement" IRB #12948) and have determined that the amended study procedures remain exempt from IRB review under 45 CFR 46.101 (b) (2).

The study procedures have been amended to include:

* Addition of a bereavement interview.

You may conduct the study, as amended above, without further IRB oversight. Your department shall maintain oversight of the project.

Further changes will require that a new Request for Amendment form be completed and submitted to the IRB.

You may view the current status or download copies of the approved amendment by going to https://myresearch.wsu.edu/IRB.aspx?HumanActivityID=37817

If you have questions, please contact the Institutional Review Board at (509) 335-3668. Any revised materials can be mailed to Office of Research Assurances (Campus Zip 3005), faxed to (509) 335-6410, or in some cases by electronic mail, to irb@wsu.edu.

Review Type: Amendment
Review Category: Exempt
Date Received: 8/9/2013
OGRD No.: N/A
Agency: N/A

You have received this notification as you are referenced on a document within the MyResearch.wsu.edu system. You can change how you receive notifications by visiting https://MyResearch.wsu.edu/MyPreferences.aspx

Please Note: This notification will not show other recipients as their notification preferences require separate delivery.
Appendix C

Research Ethics Committee of National Cheng Kung University (NCKU-REC) for Human Behavioral Sciences

國立成功大學人類行為科學研究倫理審查委員會
NCKU Research Ethics Committee for Human Behavioral Sciences

同意計畫執行證明書

案件編號：102-011
計畫名稱：台灣男性長者於喪偶後的健康相關生活品質
計畫主持人：劉怡秀專任講師
計畫執行機構：國立台南護理專科學校
核准日期：102 年 5 月 10 日
有效期限：103 年 1 月 31 日
審查文件與版本日期：
1. 研究倫理審查申請表（102.5.10）
2. 研究計畫書（102.5.10）
3. 計畫相關文件：(102.5.10)
   Certification of Exemption_Liu
   IRB training
   傳真_Liu_20130131
   問卷使用授權書_130108YiHsiuLiu
   個人基本資料問卷-Liu_20130131
   單一問題問卷-Liu_20130131
   生活品質問卷-Liu_20130131
   知情同意書_Liu-20130506

結案報告繳交截止日期：103 年 4 月 30 日
敬愛的 劉老師怡秀您好：

非常感謝您向國立成功大學人類行為科學研究倫理審查委員會申請倫理審查。本會依行政院國家科學委員會推動專題研究計劃研究倫理審查試辦方案規定，得就您的此項計畫與研究參與者有關之面向，進行審查並提供意見，且於日前獲得您的意覆。本會認為您的計畫對於研究參與者之權益，已有妥善考量及規劃，可開始執行。

日後本會將持續追蹤審查您的研究計畫，爾後如遇計畫內容變更，或計畫執行過程中發生可能影響研究參與者權益之突發事件，懇請您主動通知本會。

如果您有任何疑問，請不吝與本會聯繫。同時，本會對於您承諾將戮力維護研究參與者權益，在此致上最誠摯的感謝與敬意。

特此 謹

國立成功大學人類行為科學研究倫理審查委員會

主任委員

中華民國 102 年 5 月 10 日
Permission On Using
The WHOQOL-BREF Taiwan version

As the representative of the WHOQOL-BREF Taiwan Group, I give the permission to Ms. Yi-Hsui Lin, the doctoral candidate at The College of Nursing, Washington State University, on using the WHOQOL-BREF Taiwan version in her research project titled as

"Older Widowers in Taiwan: Exploring Older Men's Health-Related Quality of Life following Spousal Bereavement".

Signature: Kaiping Grace Yao

Date: 01/08/2013 at National Taiwan University
Appendix E
Flyer for Recruiting Older Widowers

Washington State University College of Nursing (美國華盛頓州立大學護理學院)
國立臺南護理專科學校護理科

徵求參與博士論文研究的喪偶男性長者

博士論文研究主題：臺灣男性長者喪偶後的健康相關生活品質

研究目的：探討男性長者在喪偶後的健康相關生活品質及健康相關需求。

研究邀請對象：
1. 年齡 60 歲以上，願意於一般社區的男性長者。
2. 喪偶事件發生在男性長者 50 歲以後。
3. 能說以及聽懂國語或台語，或能閱讀繁體中文。
4. 喪偶後再婚的男性長者也是受邀請的對象。

研究參與方式：受邀的喪偶男性長者接受個別訪談，訪談時間約 60 分鐘。

研究人員：劉怡秀，國立臺南護理專科學校護理科講師及護理博士班研究生
手機：0912-685-586; 電子郵件信箱 liu@mail.ntin.edu.tw

指導教授：Washington State University College of Nursing
美國華盛頓州立大學護理學院
副教授 Janet Katz 博士；教授 Mel Haberman 博士

若您身邊有符合參與研究條件的喪偶男性長者，請您幫忙傳遞此訊息或協助推薦。若您有任何疑問，有興趣進一步了解此研究或欲推薦有興趣參與此研究的男性長者，請以電話或簡訊或電子郵件聯絡劉怡秀老師。

敬祝您

平安健康，順心如意
Appendix F
Flyer for Recruiting Older Widowers (in English)

Washington State University College of Nursing (USA)
National Tainan Institute of Nursing Department of Nursing

Spousal Bereaved Older Men Wanted for a Doctoral Dissertation Research

What is the research about?
Taiwanese Older Widower's Health-Related Quality of Life following Spousal Bereavement

What is the research purpose?
The main purpose is to explore Taiwanese older men’s health-related quality of life and health-needs following spousal bereavement.

Who is eligible?
1. Men aged 60 years or older living in community
2. Spousal bereaved after 50 years of age
3. Able to understand Mandarin or Taiwanese, or read Traditional Han Chinese
4. Remarried is permissible

Research procedure: Participants will be asked to complete a survey interview about 60 minutes. The interview will be conducted by Yi-Hsiu Liu (Nursing lecturer at National Tainan Institute of Nursing) or her research assistants. The interviewer will assist the participants to complete the questionnaires.

Researcher (PhD student): Yi-Hsiu Liu, Lecturer in Department of Nursing, National Tainan Institute of Nursing, Doctoral student in PhD in Nursing
Cell: 0912-685-586; Email: liu@mail.ntin.edu.tw

Chair and Co-chair: Washington State University College of Nursing
Janet Katz, PhD. Associate Professor; Mel Haberman, PhD. Professor

If you know someone who is eligible to the research study, please let him know about the research information. If you have any questions or are interested in participating, please contact Yi-Hsiu Liu via cell phone, text message, or email.

Best wishes for a safe and healthy life!
研究參與同意書

研究主題：臺灣男性長者喪偶後之健康相關生活品質

研究員：
Janet Katz博士, 護理師, 護理學院副教授, +1509-324-7274（美國）
Mel Haberman博士, 護理師, 美國科學院護理院士, 護理學院教授, +1509-324-7358（美國）
劉怡秀, 博士班學生, 護理師, 護理學院博士候選人, 0912-685-586（臺灣）

您正被邀請參與一項由Janet Katz, Mel Haberman, 以及劉怡秀所進行的研究。此研究為劉怡秀之博士論文研究; 此同意書說明這項研究的步驟以及研究參與者參與研究的過程。請以充分的時間仔細閱讀此同意書內容。要求訪談者(研究人員或研究助理) 解釋任何您不了解之處。您也可以決定不參加這項研究。如果您參與這項研究，您可以隨時改變心意 退出研究。若您決定不參與或之後退出這項研究，將不會有任何損失。

這項研究在做什麼？

這項研究目的在探討台灣60歲以上男性長者於喪偶後的健康相關生活品質以及健康相關需求。訪談者將使用台灣簡明版世界衛生組織生活品質問卷
(WHOQOL-BREF)來評估您個人感受到的身體健康、心理健康、社會關係以及所處的環境。您因為50歲之後喪妻，且現在年逾60歲，所以被邀請參與此研究。參與此研究將花費您大約60分鐘的時間。若您現年低於60歲，或喪偶事件發生在您50歲之前，則無法參與此研究。

**如果我參與這項研究，我將被要求做什麼？**

如果您參與這項研究，您將被要求完成下列紙筆問卷調查：健康相關生活品質問卷、健康相關需求問卷以及人口特徵問卷。訪談者將協助您完成問卷填寫。問卷填寫約需40分鐘，個別訪談約需20分鐘。訪談人員將詢問您關於喪偶經驗以及生活品質等相關問題。

**如果我參與這項研究，是否可能會得到任何潛在的好處？**

如果您參加這項研究，有可能得到的潛在好處是：您可能樂於與訪談者互動；樂於分享您個人感受到的身體健康、心理健康、社會關係，以及您所處的環境。您也可能因對研究有所貢獻且將來可能幫助到其他喪偶男性長者而體驗到自我價值。

**如果我參與這項研究，是否可能遭遇到任何危機？**

參與這個研究的潛在性危機是：您可能因為回想到關於妻子過世的傷心往事而感覺到難過不舒服以及有壓力。如果您在訪談過程當中或之後出現任何悲痛難過的徵象，我們將提供您免費諮詢熱線。您可以在任何時間退出研究，或拒絕回答任何不想回答的問題。

**我的個人資料將如何被保密？**

這個研究的資料將依法律規定受到保密。沒有任何公開的研究結果可以辨識出您的身分。您的姓名將不會與研究發現有任何關聯。在某些特定的情
況底下，您的資料可能會被釋出給內部或外部的研究計畫審查。

・ 所有收集到的資料將被編列號碼，所以沒有任何姓名會出現在收集到的問卷資料。姓名與編號對照表將被分開存放於上鎖的箱子中，且在研究完成三年後銷毀。

・ 為了進行問卷訪談，我們將在公共場所中擇一您覺得舒適並可維護您隱私的空間，例如社區活動中心、社區健康中心(衛生所)或醫療院所的安靜角落以順利完成問卷填寫。若您只能在自家進行問卷訪談，兩位訪談人員將至府上拜訪以進行問卷訪談。所有訪談內容將受到保密。

・ 我們徵求您同意將訪談內容錄音。錄音資料將被轉換成文字記錄以進行研究分析。您的姓名將不會在錄音或文字記錄中出現。我們僅以研究編號來識別訪談資料。錄音資料將在三年後被銷毀。

・ 我們的保密承諾只有一個例外，那就是：當您揭露想傷害自己或他人的計畫，或是揭露別人已經或威脅傷害您，研究員就必須通報各縣市社區心理衛生中心以及您的成年子女。

・ 所有編列號碼的問卷以及主要名冊將被保存於上鎖的箱子。只有研究員以及研究助理可以取得這些資料。

這項研究的成果將來可能會在專業研討會中被發表或呈現，但您的姓名將不會被使用或與研究發現有任何牽連。這項研究所收集的資料將被保存三年。

參與這項研究是否需要付任何費用？

參與這項研究將不會花費您任何費用。

為了感謝您參與這項研究，在您完成問卷訪談後，我們將會致贈您新台幣一百元的便利超商禮券。如果您決定退出這項研究，您將會收到一封感謝函。
如果我有任何問題，我可以跟誰討論？

如果您想詢問任何與這項研究有關的問題，請與計畫主持人劉怡秀講師聯繫，電子郵件信箱為liu@mail.ntin.edu.tw, 電話：0912-685-586。若您希望討論有關您參與研究的權益，或是想要申訴或抱怨有關參與這項研究的相關事宜，請與國立臺南護理專科學校聯絡，電話：(06)211-0600。

如果您感覺到難過或不舒服，請多加利用下列免費諮詢服務：(1) 各縣市「生命線」直撥1995；(2) 各縣市「張老師」直撥1980；(3) 衛生署「安心專線」0800-788-995。

身為這項研究的自願參與者，我有哪些權利？

您對於這項研究的參與完全出自您個人意願。您可以選擇不參與這項研究。如果您選擇不參與，將不會有任何損失。您可以選擇不回答某些特定的問題，或隨時可停止參與。

我的簽名在這份同意書上代表什麼？

在這份同意書上，您的簽名代表：

- 您了解這份同意書內的內容
- 您已經向訪談者詢問過您的問題並陳述您的任何顧慮
- 訪談者已經回答您的問題以及顧慮
- 您相信您已了解這項研究以及當中潛在的好處和危機。
知情同意聲明

我同意參加這項研究，而且我將能拿到這份同意書副本。
□我同意以錄音方式記錄訪談內容。

研究參與者簽名 ________________________       ________________________

研究參與者姓名

獲取知情同意者聲明

我已經向研究參與者仔細解說他在這項研究中可預期到的研究過程。
我保證當這位研究參與者在此同意書簽名時，就我所知，他已了解這項研究的目的、步驟、參與研究的潛在好處以及潛在危機。
我也保證他：
• 可以說我用來解釋這個研究的語言
• 閱讀能力足以理解這份同意書，如果不行，這位研究參與者可以聽懂我所讀給他聽的同意書內容。
• 對於參與這個研究沒有任何難以理解的問題。

獲取知情同意者簽名 ________________________       ________________________

獲取知情同意者姓名(正楷) ________________________       在這項研究中的角色(研究員或研究助理)
Appendix H

Informed Consent (in English)

WASHINGTON STATE UNIVERSITY
College of Nursing

Research Study Consent Form

Study Title: Older Widowers in Taiwan: Exploring Older Men’s Health-Related Quality of Life following Spousal Bereavement

Researchers:
Janet Katz, PhD, RN, Associate Professor, College of Nursing, +1509-324-7274 (USA)
Mel Haberman, PhD, RN, FAAN, Professor, College of Nursing, +1509-324-7358 (USA)
Yi-Hsiu Liu, PhD candidate, RN, College of Nursing, 0912-685-586 (Taiwan)

You are being asked to take part in a research study carried out by Janet Katz, Mel Haberman, and Yi-Hsiu Liu. This form explains the research study and your part in it if you decide to join the study. Please read the form carefully, taking as much time as you need. Ask the interviewer (researcher or research assistant) to explain anything you don’t understand. You can decide not to join the study. If you join the study, you can change your mind later or quit at any time. There will be no penalty or loss of services or benefits if you decide to not take part in the study or quit later.

What is this study about?

This research study is being done to learn about the health-related quality of life (HRQOL) and health-related needs of widowed men age 60 years and older who live in Taiwan. A Taiwan version of World Health Organization Quality of Life brief questionnaire (WHOQOL-BREF) will be used to assess your perceived physical health, psychological health, social relationships, and environment.

You are being asked to take part because you lost your wife after 50 year-old. Taking part in the study will take about 60 minutes.

You cannot take part in this study if you are under 60 year-old or lost your wife before 50 year-old.
What will I be asked to do if I am in this study?

If you take part in the study, you will be asked to complete a paper and pencil survey about your health-related quality of life, a demographic questionnaire, and a brief question about health-related needs. The interviewer will assist you to complete the survey. The survey will take about 40 minutes to complete. You will be asked to participate in an interview that will take 20 minutes. The interviewer will ask you questions about your experience of being a widower and about your quality of life.

Are there any benefits to me if I am in this study?

The potential benefits to you for taking part in this study are: you may enjoy interacting with interviewer; sharing your perceived physical health, mental health, social relationships, and environment; and experience personal value from contributing to research that may eventually help other widowed older men.

Are there any risks to me if I am in this study?

The potential risks from taking part in this study are you might recall your sad memory about the death of your wife that might be uncomfortable and stressful. If you show any sign of distress during or following the interview, we will provide you hot line of free counseling. You may decide to withdraw from the study or not answer any question at any time.

Will my information be kept private?

The data for this study will be kept confidential to the extent allowed by federal and state law. No published results will identify you, and your name will not be associated with the findings. Under certain circumstances, information that identifies you may be released for internal and external reviews of this project.

- All data collected will be identified by code only, so no names will be included with the data. The names and codes will be kept in a locked briefcase and the list will be destroyed 3 years after completion of the study.
- For interview, you will be given a private space in public areas where you feel comfortable, such as a quiet corner of a lounge in community senior
centers, community health centers, and clinics, to complete questionnaires. If you can only complete the questionnaires at your home, two interviewers will visit you at home. Nothing about the content of questionnaires during interview will be told to others.

- I am asking your permission to audio record the interviews. The recording will be typed so I can analyze your responses. Your name will not be mentioned in the recordings or on the typed responses. You will be identified by the code number assigned to you. The recordings will be erased after 3 years.
- There is only one exception to our promise of confidentiality and that is: in the event that you reveal a plan to harm yourself or others or reveal that others have or threatened to have harmed you, the researcher is required to notify the Division of Mental Health, Department of Health in each city and your adult children.
- All coded questionnaires and master list will be kept in a locked briefcase. Only the researchers and research assistants will have access to the data.

The results of this study may be published or presented at professional meetings, but your name will be used or associated with the findings.

The data for this study will be kept for 3 years.

**Are there any costs or payments for being in this study?**

There will be no costs to you for taking part in this study.

You will receive a small gift voucher for taking part in this study after completion of the survey interview. If you decide to quit the study you will receive a thank you note. If you receive payment for taking part in this study, you may be asked to provide your home address or ID number.

**Who can I talk to if I have questions?**

If you have questions about this study or the information in this form, please contact the researcher Yi-Hsiu Liu, liu@mail.ntin.edu.tw, cell phone 0912-685-586. If you have questions about your rights as a research participant, or would like to report a concern or complaint about this study, please contact the National Tainan Institute of Nursing at (06) 211-0600.
If you experience distress or discomfort, please utilize the free counseling services: (a) 1995 as “life line” of each city or county; (b) 1980 as “Teacher Chang” of each city or county; and (c) 0800-788-995 as “Ease your mind” hot line of Department of Health in Taiwan.

**What are my rights as a research study volunteer?**

Your participation in this research study is completely voluntary. You may choose not to be a part of this study. There will be no penalty to you if you choose not to take part. You may choose not to answer specific questions or to stop participating at any time.

**What does my signature on this consent form mean?**

Your signature on this form means that:

- You understand the information given to you in this form
- You have been able to ask the researcher questions and state any concerns
- The researcher has responded to your questions and concerns
- You believe you understand the research study and the potential benefits and risks that are involved.

**Statement of Consent**

I give my voluntary consent to take part in this study. I will be given a copy of this consent document for my records.

☐ I agree to have the interview audio recorded.

__________________________________  __________________________
Signature of Participant               Date

__________________________________
Printed Name of Participant

**Statement of Person Obtaining Informed Consent**

I have carefully explained to the person taking part in the study what he or she can expect.
I certify that when this person signs this form, to the best of my knowledge, he or she understands the purpose, procedures, potential benefits, and potential risks of participation.

I also certify that he or she:

- Speaks the language used to explain this research
- Reads well enough to understand this form or, if not, this person is able to hear and understand when the form is read to him or her
- Does not have any problems that could make it hard to understand what it means to take part in this research.

________________________________________________________________________
Signature of Person Obtaining Consent                      Date

________________________________________________________________________
Printed Name of Person Obtaining Consent                      Role in the Research Study
Appendix I

THE WORLD HEALTH ORGANIZATION QUALITY OF LIFE (WHOQOL) - BREF

TAIWAN VERSION (IN TRADITIONAL HAN CHINESE)

世界衛生組織生活品質問卷

( 台灣簡明版 )

第一部份 生活品質問卷

問卷說明:

這份問卷詢問您對於自己的生活品質、健康、以及其他生活領域的感覺。請您回答所有的問題。如果您對某一問題的回答不確定，請選出五個答案中最適合的一個，通常會是您最早想的那個答案。

我們的問題所關心的是您最近兩星期內的生活情形，請您用自己的標準、希望、愉快、以及關注點來回答問題。請參考下面的例題：

例題一：整體來說，您滿意自己的健康嗎？

□極不滿意   □不滿意   □中等程度滿意   □滿意 □極滿意

請選出最適合您在最近兩星期内對自己健康的滿意程度，如果您極滿意自己的健康，就在「極滿意」前的□內打「√」。請仔細閱讀每個題目，並評估您自己的感覺，然後就每一個題目選出最適合您的答案。謝謝您的協助！
1. 整體來說，您如何評價您的生活品質？
   □極不好 □不好 □中等程度好 □好 □極好

2. 整體來說，您滿意自己的健康嗎？
   □極不滿意 □不滿意 □中等程度滿意 □滿意 □極滿意

3. 您覺得身體疼痛會妨礙您處理需要做的事情嗎？
   □完全沒有妨礙 □有一點妨礙 □中等程度妨礙 □很妨礙 □極妨礙

4. 您需要靠醫療的幫助應付日常生活嗎？
   □完全沒有需要 □有一點需要 □中等程度需要 □很需要 □極需要

5. 您享受生活嗎？
   □完全沒有享受 □有一點享受 □中等程度享受 □很享受 □極享受

6. 您覺得自己的生命有意義嗎？
   □完全沒有 □有一點有 □中等程度有 □很有 □極有

7. 您集中精神的能力有多好？
   □完全不好 □有一點好 □中等程度好 □很好 □極好

8. 在日常生活中，您感到安全嗎？
   □完全不安全 □有一點安全 □中等程度安全 □很安全 □極安全

9. 您所處的環境健康嗎？ (如污染、噪音、氣候、景觀)
   □完全不健康 □有一點健康 □中等程度健康 □很健康 □極健康

10. 您每天的生活有足夠的精力嗎？
    □完全不足夠 □少許足夠 □中等程度足夠 □很足夠 □完全足夠

11. 您能接受自己的外表嗎？
    □完全不能夠 □少許能夠 □中等程度能夠 □很能夠 □完全能夠

12. 您有足夠的金錢應付所需嗎？
    □完全不足夠 □少許足夠 □中等程度足夠 □很足夠 □完全足夠

13. 您能方便得到每日生活所需的資訊嗎？
    □完全不方便 □少許方便 □中等程度方便 □很方便 □完全方便

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14. 您有機會從事休閒活動嗎？
   □完全沒有機會    □少許機會    □中等程度機會    □很有機會    □完全有機會

15. 您四處行動的能力好嗎？
   □完全不好    □有一點好    □中等程度好    □很好    □極好

16. 您滿意自己的睡眠狀況嗎？
   □極不滿意    □不滿意    □中等程度滿意    □滿意    □極滿意

17. 您對自己從事日常活動的能力滿意嗎？
   □極不滿意    □不滿意    □中等程度滿意    □滿意    □極滿意

18. 您滿意自己的工作能力嗎？
   □極不滿意    □不滿意    □中等程度滿意    □滿意    □極滿意

19. 您對自己滿意嗎？
   □極不滿意    □不滿意    □中等程度滿意    □滿意    □極滿意

20. 您滿意自己的人際關係嗎？
   □極不滿意    □不滿意    □中等程度滿意    □滿意    □極滿意

21. 您滿意自己的性生活嗎？
   □極不滿意    □不滿意    □中等程度滿意    □滿意    □極滿意

22. 您滿意朋友給您的支持嗎？
   □極不滿意    □不滿意    □中等程度滿意    □滿意    □極滿意

23. 您滿意自己住所的狀況嗎？
   □極不滿意    □不滿意    □中等程度滿意    □滿意    □極滿意

24. 您對醫療保健服務的方便程度滿意嗎？
   □極不滿意    □不滿意    □中等程度滿意    □滿意    □極滿意

25. 您滿意所使用的交通運輸方式嗎？
   □極不滿意    □不滿意    □中等程度滿意    □滿意    □極滿意

26. 您常有負面的感受嗎？（如傷心、緊張、焦慮、憂鬱等）
   □從來沒有    □不常有    □一半有一半沒有    □很常有    □一直都有

27. 您覺得自己有面子或被尊重嗎？
28. 您想吃的食物通常都能吃到嗎？

□從來沒有  □不常有  □一半有一半沒有  □很常有  □一直都有
第二部份 綜合自我評估

請依您最近兩個星期的情況，回答下列題目；「0」端代表生活品質最差的狀態，「100」端代表生活品質最佳的狀態，根據此觀點，請在下列的長條圖中，以箭頭及數字的方式，標出您的情況，謝謝。
例如：整體而言，我對自己健康相關生活品質的滿意程度。

1. 綜合而言，我對自己健康相關生活品質的滿意程度。

2. 綜合而言，在喪偶之前，我對自己健康相關生活品質的滿意程度。

3. 綜合而言，就在剛喪偶之後，我對自己健康相關生活品質的滿意程度。

4. 延續上一題(第三題)，這一程度的健康相關生活品質大約維持多久？_____年 _____月
Appendix J

THE WORLD HEALTH ORGANIZATION

QUALITY OF LIFE (WHOQOL) –BREF Taiwan version

Part one: Quality of life

The following questions ask how you feel about your quality of life, health, or other areas of your life. I will read out each question to you, along with the response options. Please choose the answer that appears most appropriate. If you are unsure about which response to give to a question, the first response you think of is often the best one. Thank you very much for your participation!

Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life in the last two weeks.

1. How would you rate your quality of life?
   □ Very poor, □ Poor, □ Neither poor nor good, □ Good, □ Very good

2. How satisfied are you with your health?
   □ Very dissatisfied, □ Dissatisfied, □ Neither satisfied nor dissatisfied, □ Satisfied, □ Very satisfied

3. To what extent do you feel that physical pain prevents you from doing what you need to do?
   □ Not at all □ A little □ A moderate amount □ Very much □ An extreme amount

4. How much do you need any medical treatment to function in your daily life?
   □ Not at all □ A little □ A moderate amount □ Very much □ An extreme amount

5. How much do you enjoy life?
   □ Not at all □ A little □ A moderate amount □ Very much □ An extreme amount

6. To what extent do you feel your life to be meaningful?
   □ Not at all □ A little □ A moderate amount □ Very much □ An extreme amount
7. How well are you able to concentrate?
   □ Not at all    □ A little    □ A moderate amount    □ Very much    □ Extremely

8. How safe do you feel in your daily life?
   □ Not at all    □ A little    □ A moderate amount    □ Very much    □ Extremely

9. How healthy is your physical environment?
   □ Not at all    □ A little    □ A moderate amount    □ Mostly    □ Completely

10. Do you have enough energy for everyday life?
    □ Not at all    □ A little    □ Moderately    □ Very much    □ Extremely

11. Are you able to accept your bodily appearance?
    □ Not at all    □ A little    □ Moderately    □ Very much    □ Extremely

12. Have you enough money to meet your needs?
    □ Not at all    □ A little    □ Moderately    □ Very much    □ Extremely

13. How available to you is the information that you need in your day-to-day life?
    □ Not at all    □ A little    □ Moderately    □ Very much    □ Extremely

14. To what extent do you have the opportunity for leisure activities?
    □ Not at all    □ A little    □ Moderately    □ Very much    □ Extremely

15. How well are you able to get around?
    □ Very poor,    □ Poor,    □ Neither poor nor good,    □ Good,    □ Very good

16. How satisfied are you with your sleep?
    □ Very dissatisfied, □ Dissatisfied, □ Neither satisfied nor dissatisfied,
    □ Satisfied, □ Very satisfied
17. How satisfied are you with your ability to perform your daily living activities?
   □ Very dissatisfied, □ Dissatisfied, □ Neither satisfied nor dissatisfied, □ Satisfied, □ Very satisfied

18. How satisfied are you with your capacity for work?
   □ Very dissatisfied, □ Dissatisfied, □ Neither satisfied nor dissatisfied, □ Satisfied, □ Very satisfied

19. How satisfied are you with yourself?
   □ Very dissatisfied, □ Dissatisfied, □ Neither satisfied nor dissatisfied, □ Satisfied, □ Very satisfied

20. How satisfied are you with your personal relationships?
   □ Very dissatisfied, □ Dissatisfied, □ Neither satisfied nor dissatisfied, □ Satisfied, □ Very satisfied

21. How satisfied are you with your sex life?
   □ Very dissatisfied, □ Dissatisfied, □ Neither satisfied nor dissatisfied, □ Satisfied, □ Very satisfied

22. How satisfied are you with the support you get from your friends?
   □ Very dissatisfied, □ Dissatisfied, □ Neither satisfied nor dissatisfied, □ Satisfied, □ Very satisfied

23. How satisfied are you with the conditions of your living place?
   □ Very dissatisfied, □ Dissatisfied, □ Neither satisfied nor dissatisfied, □ Satisfied, □ Very satisfied

24. How satisfied are you with your access to health services?
   □ Very dissatisfied, □ Dissatisfied, □ Neither satisfied nor dissatisfied, □ Satisfied, □ Very satisfied

25. How satisfied are you with your transport?
   □ Very dissatisfied, □ Dissatisfied, □ Neither satisfied nor dissatisfied, □ Satisfied, □ Very satisfied

26. How often do you have negative feelings such as blue mood, despair, anxiety, depression?
   □ Never □ Seldom □ Quite often □ Very often □ Always
27. Do you feel respected by others?
   □ Not at all  □ A little  □ A moderate amount  □ Very much  □ Extremely

28. Are you usually able to get the things you like to eat?
   □ Never  □ Seldom  □ Quite often  □ Very often  □ Always
Part two: General self assessment

Please answer the following questions based on your situation in the past two weeks: “0” indicates the worst quality of life, “100” indicates the best quality of life. Please use arrow and number to indicate your situation. Thank you.

For example: In general, how am I satisfied with my health-related quality of life.

1. In general, how am I satisfied with my health-related quality of life.

   The worst
   0  10  20  30  40  50  60  70  80  90  100
   The best
   65

5. In general, before my wife died, how was I satisfied with my health-related quality of life.

   The worst
   0  10  20  30  40  50  60  70  80  90  100
   The best

6. In general, right after my wife died, how was I satisfied with my health-related quality of life.

   The worst
   0  10  20  30  40  50  60  70  80  90  100
   The best

7. Following the question 3, how long did this level of health-related quality of life last?

   __________ Year __________ Month
Appendix K

Single-item Question (in Traditional Han Chinese)

健康需求問卷

1. 請列舉出與您個人健康相關的需求，若這些需求被滿足，將能提升您目前的生活品質。您可以列舉出所有想得到的需求。
Appendix L

Single-item Question (in English)

Health-Related Needs Question

1. Please identify the personal health-related needs that you have at this current time that, if met, would improve your quality of life. You may list (or name) as many as come to mind.
Appendix M

Demographic Questionnaire (in Traditional Han Chinese)

個人基本資料

(1) 出生日期：西元_______年_______月_______日；年齡：_______

(2) 請指出您屬於下列哪一族群：1. □ 漢人， 2. □ 台灣人， 3. □ 福佬人（閩南人），
4. □ 客家人， 5. □ 大陸人， 6. □ 原住民， 7. □ 其他_______

(3) 您所完成的最高學歷是？
1. □ 無， 2. □ 小學， 3. □ 國中（初中）， 4. □ 高中/職
5. □ 大學， 6. □ 碩士， 7. □ 博士或以上，
8. □ 其他________

(4) 您現在的職業是？
1. □ 全職。（請寫出職業名稱：________________________）
2. □ 兼職。（請寫出職業名稱：________________________）
3. □ 無工作或待業中
4. □ 已退休

(5) (A) 您目前每月的平均收入（個人退休俸或薪水）？
1. □ 無收入 2. □ 低於 10,000 3. □ 10,000-19,999
4. □ 20,000-29,999 5. □ 30,000-39,999 6. □ 40,000-49,999
7. □ 50,000-59,999 8. □ 60,000-69,999 9. □ 70,000-79,999
10. □ 80,000 或以上

(B) 除了您的薪水或退休俸，您還有哪些經濟來源？
1. □ 兒子， 2. □ 女兒， 3. □ 社會福利， 4. □ 投資理財
5. □ 其他：________________________

(C) 您目前每個月的平均總收入是多少（包含其他資助）？
1. □ 無收入 2. □ 低於 10,000 3. □ 10,000-19,999
4. □ 20,000-29,999 5. □ 30,000-39,999 6. □ 40,000-49,999
7. □ 50,000-59,999 8. □ 60,000-69,999 9. □ 70,000-79,999
10. □ 80,000 或以上

(6) (A) 您的妻子於哪一年哪一月過世？西元_______年_______月
(B) 您妻子過世的原因是什麼？________________________
(C) 您當時是否有預期到妻子的過世？1. □ 是， 2. □ 否

(7) (A) 在您妻子過世之前，您們之間的感情關係如何？
1. □ 非常好， 2. □ 好， 3. □ 還算可以， 4. □ 不好， 5. □ 非常不好
(B) 您與已過世的妻子結婚多少年？___________年.

(8) 您目前有多少個子女及孫子女？
兒子______， 孫子______， 孫女______；
女兒____，外孫____，外孫女____

(9) 您是否協助子女照顧孫子或孫女？
1. □ 是，您照顧多少個孫子或孫女？____
2. □ 否

(10) 您目前的居住安排是？
1. □ 獨居
2. □ 與一個子女同住
3. □ 輪流與兩個或兩個以上子女同住
4. □ 與友伴同住（重要友伴）
5. □ 住在退休老人社區（不須生活協助）
6. □ 住在護理之家或長期照護機構
7. □ 與看護或家務協助者同住
8. □ 其他____

(11) 您與子女的聯絡有多頻繁？
1. □ 每天， 2. □ 每週 4-6 次， 3. □ 每週 1-3 次， 4. □ 低於每週一次。

(12) 您居住在目前的社區已經幾年？____年。

(13) 您與鄰居的聯絡有多頻繁？
1. □ 每天， 2. □ 每週 4-6 次， 3. □ 每週 1-3 次， 4. □ 低於每週一次。

(14) 您與朋友的聯絡有多頻繁？
1. □ 每天， 2. □ 每週 4-6 次， 3. □ 每週 1-3 次， 4. □ 低於每週一次。

(15) 您是否參與義工活動？
1. □ 是。（擔任義工之機構：_________；平均服務時間：____小時/週）
2. □ 否。

(16) 您的宗教信仰或個人信仰是：1. □ 無， 2. □ 佛教， 3. □ 道教，
4. □ 一貫道， 5. □ 基督教， 6. □ 天主教， 7. □ 伊斯蘭教(回教)，
8. □ 無神論， 9. □ 相信有神，但無特定宗教；10. □ 其他__________________

(17) (A) 您是否有參加宗教活動？
1. □ 無， 2. □ 佛教， 3. □ 道教， 4. □ 一貫道， 5. □ 基督教，
6. □ 天主教， 7. □ 伊斯蘭教(回教)， 8. □ 其他__________________

(B) 若有參加，平均每週參與幾小時：___________ 小時/週。

(18) 您目前的婚姻狀態是？1. □ 喪偶， 2. □ 再婚，
3. □ 同居， 4. □ 離婚， 5. □ 分居， 6. □ 其他__________________

(19) 您是否有被診斷出慢性疾病？（若需要可勾選多於一個選項）
1. □ 高血壓， 2. □ 心臟病， 3. □ 糖尿病， 4. □ 中風，
5. □ 肝臟疾病， 6. □ 腫瘤疾病， 7. □ 腎臟疾病， 8. □ 關節炎，
9. □ 骨質疏鬆， 10. □ 癌症， 11. □ 無， 12. □ 其他__________________

(20) (A) 您目前服用多少種長期處方藥物？________

藥物名稱：________________________________________
(B) 您目前是否有服用幫助睡眠之藥物？
1. □ 是， 2. □ 否

(C) 您目前是否有服用抗憂鬱藥物？
1. □ 是， 2. □ 否
Appendix N

Demographic Questionnaire (in English)

Demographic Questionnaire

(21) Date of birth: Year______Month_______Day______; Age: _______


(23) What is your completed highest education?
1. □ None,  2. □ Elementary school,  3. □ Middle school,  4. □ High school  
5. □ College,  6. □ Master’s degree,  7. □ Doctoral degree or higher,  8. □ Other __________

(24) What is your current occupation?
1. □ Full time. (Please indicate: ______________________________)  
2. □ Part time. (Please indicate: ____________________________)  
3. □ Unemployed or seeking job  
4. □ Retired

(25) (A) What is your current average monthly income (only retire pension or salary)?
1. □ No income  2. □ Less than 10,000  3. □ 10,000- 19,999  
4. □ 20,000- 29,999  5. □ 30,000- 39,999  6. □ 40,000- 49,999  
7. □ 50,000- 59,999  8. □ 60,000-69,999  9. □ 70,000-79,999  
10. □ 80,000 or above

(B) What resources of financial support are you receiving in addition to your salary?
1. □ Son(s),  2. □ Daughter(s),  3. □ Social warfare,  4. □ Invest  
5. □ Other: _________________________________

(C) What is your current average total monthly income (including other support)?
1. □ No income  2. □ Less than 10,000  3. □ 10,000- 19,999  
4. □ 20,000- 29,999  5. □ 30,000- 39,999  6. □ 40,000- 49,999  
7. □ 50,000- 59,999  8. □ 60,000-69,999  9. □ 70,000-79,999  
10. □ 80,000 or above

(26) (A) What year and month did your wife die?  Year______; Mon _______  
(B) What was the cause of your wife’s death? _______________  
(C) Was your wife’s death expected? 1. □ Yes,  2. □ No

(27) (A) How would you categorize your relationship with your wife prior to bereavement?  
(B) How many years were you married to your deceased wife?_____ years.

(28) How many children and grandchildren do you have?  
______ sons,  ______ sons’ sons,  ______ sons’ daughters;
daughters, daughters’ sons, daughters’ daughters

(29) Do you help your children take care of your grandchildren?
1. □ Yes. How many Grand children do you take care? ______
2. □ No.

(30) What is your living arrangement?
1. □ Live alone
2. □ Live with one son/daughter
3. □ Rotate Living with more than one son/daughter
4. □ Live with companion (Significant friend)
5. □ Live in retirement center (without assistance)
6. □ Live in nursing home or long-term care facility
7. □ Live with nursing aide or home care aid
8. □ Other ______

(31) How often do you communicate with your children?
1. □ Every day, 2. □ 4-6 times per week, 3. □ 1-3 times per week,
4. □ Less than once per week.

(32) How many years have you lived in the current neighborhood? _____ years.

(33) How often do you communicate with your neighbors?
1. □ Every day, 2. □ 4-6 times per week, 3. □ 1-3 times per week,
4. □ Less than once per week.

(34) How often do you communicate with your friends?
1. □ Every day, 2. □ 4-6 times per week, 3. □ 1-3 times per week,
4. □ Less than once per week.

(35) Do you participate in volunteer activities?
1. □ Yes. (Facility:__________; average amount of time:________hours/week)
2. □ No.

(36) What is your religion/personal beliefs?: 1. □ No, 2. □ Buddhism, 3. □ Taoism,
9. □ Believe in God, but without specific religion; 10. □ Other__________

(37) (A) Do you participate in religious activities?
1. □ No, 2. □ Buddhism, 3. □ Taoism, 4. □ I-Kuan Tao,
(B) If yes, please indicate average amount of time:__________ hours/week.

(38) What is your current marital status? 1. □ Widowed, 2. □ Re-married,
3. □ Domestic partner, 4. □ Divorce, 5. □ Separate, 6. □ Other__________

(39) Do you have diagnosed chronic diseases? (check more than 1 as necessary)
5. □ Liver disease, 6. □ Lung disease, 7. □ Renal disease, 8. □ Arthritis,
(40)  (A) How many prescribed long-term medications are you taking? ___________
          Names of medications: __________________________________________
(B) Are you taking sleeping aids?  1. □ Yes,  2. □ No
(C) Are you taking Antidepressants? 1. □ Yes,  2. □ No