

The Influences of Volunteering and Paid
Employment on Older New Zealanders Health
Related Quality of Life While Testing for
Potential Confounding Variables

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A dissertation submitted in partial fulfillment of the
requirements for the degree of Master of Health
Science in Psychology at AUT University

26 November 2010

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Signed:

Date:

Acknowledgments:

I would like to acknowledge and thank the following people.

My supervisor, Dr. Christian Krageloh, for commendable patience and being such a top bloke.

My Mother, Betty Shepherd for her demonstration on how to live well during retirement years.

The many older New Zealanders who took the time to complete my survey.

Abstract

Utilizing the QHOQOL-BREF, which ascertains health related quality of life (HRQOL) across four domains, physical, psychology, social and environment, the effects of volunteering and paid employment on the HRQOL of older New Zealanders was assessed while testing four potential confounding variables, age, gender, income and extent of religious belief. About 65% of participants were involved in volunteer activity with about 13% involved in paid employment. Volunteer activity was associated with significantly enhanced HRQOL for three domains, physical, psychology and environment above and beyond the effects of potentially confounding variables. No significant HRQOL effects were revealed with respect to paid employment.

The post war baby boom cohort is due to reach retirement age over the next few years. While traditionally retirement has been seen as an era of decline (Townsend, 1981), advances in healthcare have resulted in retirees living longer and maintaining consistent good health, which results in greater potential productivity than possible for previous generations (Gottlieb & Gillespie, 2008). The compression of morbidity promoted by social and technical advances has raised expectations of an extended, productive and vital old age (Hinterlong, 2008). New population forecasts predict that by 2026 over 20% of the New Zealand population will be aged over 65 years, up from 12% in 2006 (Ministry of Social Development, 2009). This trend is apparent throughout the developed world (Hao, 2008; McMunn, Nazroo, Wahrendorf, Breeze & Zaninotto, 2009; Tokuda et al., 2008). While for some individuals, retirement may simply mean a withdrawal from the workforce, for others it may mean a significant change in roles, a transitional passage from late adulthood to old age, an age which entails new norms, duties and rights (Atchley, 2000). Many older individuals remain involved in productive activities of many forms, with paid employment and volunteer activity two forms of active participation commonly undertaken (Bass, Caro & Cheng, 1993). This level of productive activity challenges the view that older citizens are a drain of national resources and proposes that the elderly represent a valuable social and economic resource (Hinterlong, 2008).

Burr, Caro and Moorhead (2002) note that it is probable that the demand for volunteer labour will increase as resources for social programmes diminish.

In addition, with the greying of the New Zealand workforce, retaining older workers in the workforce may benefit the worker and the country, by providing retirement income for the worker, as well as services and tax revenue to support those elderly that are more dependent (Ministry of Social Development, 2009).

While there is no compulsory retirement age in New Zealand, older New Zealanders tend to start to withdraw from the workforce when they reach 65 years of age and become eligible for national superannuation (Guardian Trust, 2009), with most seniors anticipating leaving the paid workforce all together by the age of 70 years (Ministry of Social Development, 2009).

Research indicates the mean lifespan of New Zealanders is approximately 80 years (Statistics New Zealand, 2009). Therefore, if retiring at 65 years, a potential 15 years of life is left for the average New Zealander. In the current year, 2010, approximately 568,000 New Zealanders will be aged over 65 years (Statistics New Zealand, 2009), out of a total population of approximately 4,470,000 (Statistics New Zealand, 2010). With approximately 50% of New Zealand 65 year olds undertaking unpaid volunteer work, 31% working fulltime as well as 18% working part-time (Ministry of Social Development, 2009), research into the effects of these activities on the health-related quality of life (HRQOL) of older New Zealanders is timely.

Volunteer work and paid employment offer two avenues for meaningful activities which loosely conform to two current theoretical models for successful

aging, both of which propose that continued participation in society is beneficial for elders' quality of life (QOL). Havighurst (1960) developed activity theory, which suggests there is a positive relationship between activity and enhanced QOL in later life. Social activity in particular is seen as important in maintaining QOL in later life (Lemon, Bengston & Peterson, 1972). Activity theory proposes that QOL is maintained in later life if activities undertaken in mid-life are continued. It suggests that as activities are abandoned due to age or retirement, QOL can be enhanced or maintained by substituting abandoned activities for other similar endeavours (Havighurst, 1960). For example, volunteer activity can be undertaken as a substitute for paid employment. Activity theory is a homeostatic theory, which proposes that the correct response to change due to retirement, or other life stages, is to restore activity to previous levels, either by adopting new roles when previous roles are lost, or by investing more effort in remaining roles (Havighurst, 1960).

More recently, Atchley (2003) developed continuity theory, which maintains that continuity of thoughts and patterns of behaviour allow older individuals to maintain their QOL as they age. Continuity theory proposes that adaptive change, based on continuity of ideas, beliefs and lifestyle are central to human development. Thoughts and patterns of behaviour develop which are the result of selective investment of time and energy into specific areas of interest. As individuals reach retirement age they endeavour to modify long-standing values, preferences and beliefs to new situations. Conceptually, continuity

theory can be viewed as the maintenance of long-standing life patterns. These long standing thoughts and behaviours are maintained due to the positive feedback they engender. Maintenance of these thoughts and patterns of behaviour allow individuals to progress through life with a minimum of discomfort or crisis, by supporting a coherent life story which allows a considerable amount of evolutionary change as capabilities diminish due to the aging process. Continuity theory can be thought of as the maintenance of life patterns, for example, an analogy may be of an artist painting for years using oil paints, and then changing to watercolours, a commitment to art is maintained, however the medium has changed (Atchley, 2003).

Volunteer work and paid employment have been extensively researched in order to determine what influence these two activities exert on the QOL of older folk. Research consistently supports the view that volunteer activity is beneficial to the QOL of older folk. Volunteering is defined as "...any activity in which time is given freely to benefit another person, group or organization" (Wilson, 2000, p. 215). Longitudinal research undertaken on the relationship between volunteer activity and mental health suggests that volunteer activity is associated with reduced levels of depression and also proposes that individuals may pursue volunteer activity in order to reduce the effects of mild depression (Li & Ferraro, 2005). Luoh and Herzog (2002) using information sourced from a national (United States of America) longitudinal survey designed to explore the economic and health related status of older participants found that participants

who volunteered had superior mental health when compared to those who did not volunteer. Morrow-Howell, Hinterlong, Rozario and Tang (2003), in additional longitudinal North American research, also proposes that elder participants who volunteer display less depressive symptoms than those who do not volunteer.

The finding of superior mental health is supported by a Wisconsin cross-sectional study involving non-institutionalised elderly, where volunteer activity was associated with enhanced happiness. Three groups were studied, volunteers, those in full-time paid employment and those in part-time work. Volunteers displayed the highest levels of happiness, followed by those in full employment and lastly those who were employed part-time (Ray & Heppe, 1986). Superior QOL is also supported by longitudinal study undertaken in Singapore on participants aged over 55 which compared three groups, those who volunteered, those who were in paid employment, and those who neither worked nor volunteered. Those who volunteered and those who were in paid employment recorded significantly enhanced cognitive performance scores. They displayed fewer depressive symptoms and enhanced mental well-being, as well as superior life satisfaction when compared to non-volunteering and non working participants (Schwingel, Niti, Tang & Ng, 2009). Non working or volunteering seniors were also more reliant on others to support their basic and instrumental activities for daily living (Schwingel, Niti, Tang & Ng, 2009).

Additional North American research also supports a positive psychological association for elders who perform volunteer activity. Research undertaken using data from the 1995 National Survey of Midlife development in the United States, shows retirees who undertook volunteer activity profit from positive psychological health effects. Positive psychological health effects are thought to be obtained due to individuals who volunteer perceiving themselves as having purpose in life. Volunteer activity is thought to provide positive role identity at a time in life where role identities diminish, perhaps due to retirement from employment and reduced parental duties and obligations (Greenfields & Marks, 2004). Increasing number of roles, such as volunteering in retirement, are thought to correlate with decreasing psychological distress such as depression and anxiety (Thoits, 1983).

In another North American study designed to assess whether formal volunteering reduced the rate of mental health decline in later life, four waves of a health and retirement survey, 1996, 1998, 2000 and 2002 were analysed. Results indicated combined full-time work and moderate levels of volunteer activity significantly decreased the rate of adverse mental health symptoms such as depression (Hao, 2008). Recent research undertaken in New Zealand also supports the HRQOL benefits of volunteering.

Research also consistently supports the view that elders' physical health is supported by volunteer activity. Luoh and Herzog (2002), in a North

American study of participants born before 1923, proposes that participants who undertake volunteer activity are more likely to report good health and are less likely to suffer limiting physical disorders when compared to participants who did not undertake volunteer activity. Strawbridge, Cohen, Shema & Kaplan (1996), demonstrate that within a longitudinal study which evaluated successful aging at age 75 years, participants who were involved in volunteer activity were more likely to have aged successfully. Successful aging was gauged by participants being able to easily undertake physical activities expected of a 75 year old adult, such as walking half a mile or shopping with little or no difficulty. Participants in this study were first interviewed in 1984, with follow-up interviews undertaken in 1986. More recently, older adults QOL was assessed using data collected in face to face interviews in 1986, 1989 and 1994. Older adults who volunteered reported higher levels of well-being, with well-being being assessed by self-rated health and functional dependency (Morrow-Howell, Hinterlong, Rozario & Tang, 2003).

Additional longitudinal research exploring the benefits of productive engagement for white and African Americans aged over 60 suggests productive engagement is associated with enhanced functional ability. Formal and irregular employment, caregiving, volunteering and informal social assistance were proposed as productive engagement. Results indicated productive engagement was positively associated with enhanced self reported functional status and health. White Americans recorded higher health and functional status gains from

productive engagement than African Americans, with baseline data indicated African Americans experienced poorer health than White Americans overall (Hinterlong, 2006). Volunteering is believed to engender a sense of control and purpose as well as promote self efficacy (Van Willigen, 2000). Volunteer activity may also enhance QOL through public approval of the activity and private feelings of purposeful, productive and moral endeavour (Gottlieb & Gillespie, 2008).

Schwartz, Meisenhelder, Ma and Reed (2003), propose that helping others is related to higher levels of mental health, above and beyond the benefits of receiving help and other known psychospiritual, stress and demographic factors. Brown, Nesse, Vinokur and Smith (2003) found that giving instrumental support to friends, relatives and neighbours resulted in significantly reduced mortality for elderly donors. In this study, no mortality benefits were attained by the recipients of support. Thomas (2009) supports this finding with her research, which shows that providing support for friends or family correlates highly with older adults' well-being. Increased numbers of support activities undertaken also enhanced well-being (Thomas 2009).

Research suggests volunteering enhances HRQOL by volunteer activity supporting enhanced status within the community by the community recognising the value of the volunteer task being undertaken (Sieber, 1974). Personal belief that the volunteer activity undertaken is useful and has high individual moral value may also enhance volunteers HRQOL (Gottlieb & Gillespie, 2008).

Volunteering is also thought to support an individual's belief of control over one's life and reinforce self-efficacy (Van Willigen, 2000). Health-related quality of life benefits may be accrued through volunteering by social activities, such as group membership promoted by the volunteer activity (Cannuscio, Block & Kawachio, 2003). Group membership is thought to benefit an individual through the accumulation of social capital with (Cannuscio, Block and Kawachio, 2003) describing social capital as good will that is built up through participation in formal or informal groups. Putman (1995), claims that social capital is the public good that resides in shared values and the trust of a group. Greeley (1997) describes social capital as the stockpile of social relations and shared values that enable individuals to cooperate. A store of social capital is available to all members of a group to obtain information and support through (Putman, 1995; Gray, 2008).

Given the apparent benefits of volunteering, it is of interest to understand who volunteers and why. Gottlieb and Gillespie (2008) suggest that a clear socio-economic divide separates those who formally volunteer with those who do not. They propose that middle-class, relatively well educated individuals are more likely to formally volunteer than other socio-economic groups. They further propose that this group is sought after by volunteer organisations due to the personal, social and cultural capital they bring to the volunteer role. Wilson and Musick (1997) contend that church involvement encourages volunteer activity as religious ideals of benevolence encourage volunteer participation as

well as of providing the institutional channels for volunteer activity.

Membership of a religious organisation may also provide a mechanism through which individuals come in contact with others who undertake volunteer activity, normalising volunteer activity (Wilson & Janoski, 1995).

Greeley (1997), in a North American context, also finds a link between religious organisations and volunteer work, with individuals who attend church services once or more a week being approximately twice as likely to volunteer as non church goers. Greeley also states that skills learnt through volunteering for religious organisations are often then used for non-secular volunteer activities. Volunteer service is seen as a sign of generosity, civic responsibility and ethical concern with North Americans often volunteering for idealistic, moral reasons and Europeans for pragmatic reasons (Greeley, 1997).

While religious belief and involvement appears to enhance the rate of volunteer participation (Piliavin and Charng, 1990), propose altruism may also explain volunteer activity. While historically altruism was thought to be based on selfish egotistical motives, alternative thinking suggests that true altruism, acting to benefit another, may be part of human nature (Hoffman, 1981).

Altruism can be defined as ‘...behavior that promotes the welfare of others without conscious regard for one’s own self-interests.’ (Hoffman, 1981, p. 124). Volunteer activity could be stimulated by emotional, moral or empathic feelings engendered by altruistic beliefs (Hoffman, 1981). Altruism requires a person to

have an understanding of another person's situation and entails the ability to vicariously experience that situation (Unger, 1991). Those who have high moral expectations of themselves may be more likely to pursue pro-social behavior such as volunteering (Piliavin & Charng, 1990). In a study of hospice volunteers based in New Zealand, 88% of the volunteers interviewed described being strongly motivated to help others (Payne, 2001). Altruism may also relate to Christian religious discourse, with Leviticus 19:18 asserting that one should love one's neighbour as one loves oneself (Stark, 1989).

While research on volunteering uniformly supports the view that volunteer activity enhances the QOL of older individuals, paid employment research provides a more mixed result in regard to its influence on QOL for this population. Employment can be defined as an occupation or activity by which a person earns a living, through work or a business (Collins English Dictionary, 2006). Moving from full-time paid employment to retiring takes many forms with those of retirement age, or approaching retirement age, often undertaking bridge employment. Bridge employment is defined as employment, often part-time, that takes place after the cessation of full-time employment but prior to full-time retirement (Kim & Feldman, 2000). In a study involving retirement age university professors who became voluntarily redundant from their mid-life careers, those participants who undertook bridge employment displayed significantly higher levels of life satisfaction compared to those who did not undertake bridge employment. This significant result was obtained whether

bridge employment was undertaken at the university where the participants were originally employed or in other fields (Kim & Feldman, 2000).

In earlier research on bridging employment, in a rural North American setting, bridging employment was thought to enhance participants' experience of retirement by allowing participants to remain engaged in productive roles (Dorfman & Rubenstein, 1993). Palmore and Stone (1973) propose that bridging employment enhances longevity by boosting mental ability, supporting effective problem solving ability and enhanced adaption skills when challenging life events are experienced. Christ et al. (2007) with data from a North American national health survey, found that those elderly who undertook bridge employment experienced less depressive symptoms compared to those participants who were not employed at all. An additional benefit of bridge employment is that it allows individuals to explore activities and occupations different from those undertaken during mid-life (Feldman, 1994; Haywood, Friedman & Chen, 1998; Adam & Rau, 2004).

Various studies propose that various occupations and socio-economic groups are likely to undertake bridging employment. Haywood, Friedman & Chen (1998), propose professionals, or those holding management positions are more likely to undertake bridge employment in comparison to farmers and blue collar workers. Dorfman and Rubenstein (1993) however, contend that in a North American rural survey, farmers and farm managers were likely to

undertake bridge employment subsequent to full-time retirement. Kim and Feldman (2000) suggest that individuals of retirement age whose sense of self-worth is closely aligned with their professional life and accomplishments are most likely to seek bridging employment.

According to (Ekerdt, 2010) employment in later years offers individuals many things that retirement may curtail: income, a reason for grooming and self-care, a daily schedule, social networks and a base of self image among others. Ekerdt notes that, in this North American study, more people are working later in life than in previous years. From 1987 to 2007, participation in the workforce for those aged 65-69 years rose from 25.8% to 34.3% for men and from 14.3% to 25.7% for women. The majority of this increase was in full-time employment.

In an early North American study assessing what influence paid employment had on QOL (Herzog, House & Morgan, 1991), determined that employed participants experienced enhanced psychological health in comparison to participants who were not employed. This psychological benefit was further enhanced if the individuals could match their desired weekly hours of work with the amount which they actually worked. Data for this study was accessed via a large population survey. In another sizeable North American study, however, McIntosh and Danigelis (1995) report that no psychological benefit was accrued by undertaking paid employment, for males or females of retirement age.

Fengler (1984), in early research undertaken with participants from both rural and urban settings in Vermont, also reports mixed results in relation to paid employment and QOL. Tokuda et al. (2008), in a Japanese survey of community dwelling seniors aged 65-74 years found no significant health or psychological benefits for those in paid employment over those not in paid employment. In this study, higher income was found to have a moderate positive effect on QOL. Income may have been enhanced by employment; however participants who did not work and who enjoyed higher incomes also achieved a moderate increase in QOL

Along with volunteering and paid employment, age, gender, income and religious belief are also thought to influence the QOL of older folk. The literature predominantly, though not unanimously, supports the view that religious belief and participation in religious organisations enhances the QOL for older people. As (Ferriss, 2002) notes, the western cultural definition of QOL is anchored on Judeo-Christian ideals. With societal values reflecting religious ideals, it can be expected that religious involvement will lead to superior QOL. Religion can be defined as ‘...an organized system of beliefs, practices, rituals, and symbols designed to facilitate closeness to the sacred or transcendent (God, higher power, or ultimate truth/reality)’ (Moreira-Almeida & Koenig, 2006, p 844).

With regard to the influence of religious belief and participation on the HRQOL of the elderly (Idler, 1987), in early cross-sectional research, reports that high levels of public religious involvement is associated with lower levels of functional disability and depressive symptoms when compared to non religious participants. Idler proposes four hypotheses that may contribute to increased HRQOL, a reduction of harmful practices such as smoking and drinking alcohol in religious populations, social cohesion and support provided by religious involvement, a meaning system for explaining and making sense of life and a religious lens through which to filter experiences in times of distress and stressful life events. Pargament, Smith, Koenig and Perez (1998) suggest negative or stressful life events may be eased by positive religious coping patterns. These positive patterns include seeking spiritual support, seeking or expecting religious forgiveness, experiencing collaborative religious coping, a feeling of spiritual connection, religious purification and the expectation of a benevolent religious re-appraisal.

George, Ellison and Larson (2002) in information gleaned from meta-analysis, propose four pathways with in which religious belief and participation enhances HRQOL. They are public participation in religious life such as attending religious services and prayer groups, religious affiliation to major religious groups or to specific denominations, private religious practice such as prayer and meditation and religious coping, which is the extent to which an individual turns to religion when coping with adverse life events. Ellison (1991)

states that religious involvement results in fewer negative psychosocial consequences to traumatic life events such as illness and accident. Early meta-analysis undertaken using North American research also indicates that a positive correlation between subjective QOL and religion; however analysis suggested religious activity, rather than religiosity was more pertinent to enhanced QOL. This project also proposed that the effect of religiosity was more pronounced for older adults rather than young or middle-aged adults (Witter, Stock, Okun & Haring, 1985).

Recent research also supports the hypothesis that belief in a higher being leads to enhanced HRQOL. Comprehensive HRQOL research undertaken by the World Health Organisation (WHOQOL SRPB Group, 2006) found that religious and spiritual belief relates positively to four quality of life domains tested, physical, social, environment and psychological. This research was undertaken in 18 field centers from around the world. Spiritual and religious belief appears to be particularly important to HRQOL when participants are ill or nearing the end of their life. Buono, Urciuoli and De Leo (1998) in an Italian study on the HRQOL of extremely elderly participants also found that religious belief became an important factor in HRQOL for this population.

Not all research however supports the view that religious involvement enhances QOL. In research on three groups facing challenging situations, Oklahoma residents facing the aftermath of the Oklahoma bombing, university

students experiencing adverse life events and older adults confronting life-threatening illness, researchers found a negative religious mechanism could be initiated which did not enhance QOL. This negative mechanism consisted of a spiritual disconnect, the thought that God was punishing, an interpersonal religious disconnect and demonic re-appraisal, among other negative cognitions (Pargament, Smith, Koenig & Perez, 1998).

Looking at the effects of religion from a non-western, non-Christian perspective also shows mixed results in relation to religion and its effects on QOL. In a small early study comparing the QOL of Tibetan refugee Buddhists and native Hindu participants residing in Hamachal, Pradesh, India, results indicated that the refugee Buddhists reported a higher quality of life, even though they experienced language difficulties and reduced income compared to the local Hindus. This enhanced QOL was explained as being due to the Buddhists pleasure at living in the presence of the living God, the Dalia Lama and also due to the Buddhist interpretation of karma. The Buddhist view of karma involves doing good deeds and living well now, in order to ensure good fortune in the future. The Hindu conceptualisation of karma, by comparison, attributes today's misfortune to sins or bad deeds committed in the past. In brief, Buddhist religious belief is positive, rewarding and forward looking, while Hindu belief is negative, punitive and backward looking (Fazel & Young, 1988).

As with volunteering, research consistently shows that older individuals with high income enjoy enhanced HRQOL when compared to their compatriots with reduced income. Swedish research, which studied the effects of social interaction, health and the financial position of participants with reduced self-care capacity, found a significant positive correlation between enhanced income and increased life satisfaction. This project was the Swedish component of a European wide study and involved cross-sectional analysis of 522 participants aged between 65 and 89 years. This project also indicated women experienced poorer health than men (Borg, Hallberg & Blomqvist, 2006).

Borgonovi (2008), in open age research on the effects of volunteering and other variables on self-reported health and happiness while using a comprehensive North American dataset, found reduced income was associated with diminished health for both those who volunteered as well as those who did not volunteer. Low income volunteers however, rated themselves as happy as high income volunteers. Figueira et al., (2009) also proposed that low income is a most significant variable when predicting HRQOL. Figueira further proposed that even highly resourced individuals who were non-active nursing home residents experienced, as a group, higher HRQOL and their poorly resourced fellow inmates.

The effect of income on HRQOL is apparent in both urban and rural settings. Italian research which studied the HRQOL of both a city and country

sample report that increased income correlates positively with enhanced HRQOL. This cross-sectional study, which comprised of 152 participants from a rural area and 152 participants from an urban setting, suggests that reduced income may affect an individual's ability to access, and in rural areas reach, appropriate healthcare, decreasing HRQOL (Lucchetti, Corsonello & Gattaceca, 2008). Comprehensive cross-sectional research involving 1000 participants undertaken in Canada and Norway suggests a resource rich physical environment is significantly associated with enhanced HRQOL for individuals aged 60 years and above (Low, Molzahn & Kalfoss, 2008).

Additional European research focusing on older males also finds a strong correlation between income and HRQOL. Using data from a national census, German researchers determined that lower income negatively affected the HRQOL of older males when compared to the better resourced, with lesser resourced males dying younger. At age 65 years, lesser resourced participants could expect to live for an additional 12.5 years compared to those who were well funded, who could expect an additional 20 years of life. The researchers noted that income related HRQOL deficits incurred early in life persisted through to old age (Shkolnikov, Scholz, Jdanov, Stegmann & von Gaudecker, 2007). Income also appears to significantly affect HRQOL in Asia, with recent Japanese research discovering a clear link between income and HRQOL. With a independently living, community dwelling sample, randomly selected and aged 55-74 years, high annual income showed a significant association with physical

health along with a near significant affect with mental health (Tokuda et al., 2008).

Additional international research further strengthens the link between income and HRQOL. Cross-sectional research undertaken in Turkey, which was designed to determine if there was a link between socio-demographic status and life satisfaction found that participants whose reported income level was low experienced significantly lower life satisfaction when compared to those participants who enjoyed higher income (Karatas & Duyan, 2008). Another small, cross-sectional Chinese undertaking also found that enhanced income, education and social support were all significantly associated with enhanced subjective QOL in an elderly population (Zhang, Huang, Ye & Zeng, 2008).

As with income and volunteering, age appears to significantly and consistently affect HRQOL, with research indicating increased age reduces HRQOL. German research undertaken to establish norms for the general population, found that a general decline on HRQOL occurred as participants aged. This project was undertaken in three countries, Germany, Norway and Sweden, with German participants reporting a steeper decline in HRQOL with age than the two Nordic countries. The researcher proposes that the expectations of aging in the three countries may account for the discrepancy between the German and Nordic countries with Germans generally having a more negative view of aging (Fayers, 2001).

Thome, Dykes & Hallberg (2004), in Swedish research designed to assess the relative HRQOL of elderly cancer sufferers when compared to a healthy control group also propose a link between declining HRQOL and age within the control group and within the group comprised of individuals suffering from cancer. A Turkish research project undertaken to determine the HRQOL of elderly participants also reports that HRQOL declines as individual's age. Carried out on a rural population with participants aged between 65 years to over 80 years, research indicated those of older age, as a group, depended more on others to fulfill daily living needs and experienced a reduction in functional ability (Arslantas, Unsal, Metintas, Koc & Artlantas, 2009).

Gender is also a significant variable when assessing the HRQOL of the elderly. In a Spanish study designed to ascertain whether gender influenced HRQOL, it was determined females experienced considerable reduced HRQOL when compared to males of similar age. Women were more likely to experience functional impairment in self-care as well as reduced mobility (Orfila, Ferrer, Lamarca, Tebe, Domingo-Salvany & Alonso, 2006). Additional European research also supports a gender influence on HRQOL, with a Swedish study which researched participants self report health complaints, finding that females reported significantly higher numbers of health complaints, and recording significantly lower HRQOL than men. This research project revealed low physical HRQOL was strongly associated with physical complaints such as incontinence, reduced mobility and breathlessness when undertaking activities.

Low mental HRQOL was found to be associated with fatigue, feeling nervous or worried and sleeping disorder (Borglin, Jakobsson, Edberg & Hallberg, 2005).

The present study is interested in the effects of volunteering and paid employment on the HRQOL of elderly New Zealanders, while assessing for the following potentially confounding variables: age, gender, income and religious belief. In order to collect data for the present study, a subjective collection tool, the WHOQOL-BREF was chosen (Murphy, Herrman, Hawthorne, Pinzone & Evert, 2000). Traditionally, QOL research concentrated on objective measures that could be used to gauge changes in QOL (Farquar, 1995). Measurements including physical ability (Muldoon, Barger, Flory & Manuck, 1998) as well as mortality and morbidity rates have been used to calculate objective HRQOL (Saxena & Orley, 1997). Social statistics such as delinquency, divorce rates as well as standard of living rates expressed in the possession of material goods such as motor vehicles, have also been used to assess QOL, along with objective environmental measures such as air and water purity (Zhan, 1992).

While objective measures may indicate conditions under which people live, they may not reflect the actual life experiences of individuals (Campbell, 1976). Research indicates objective measures account for only around 15% of the variance of an individual's QOL, with two subjective measures, happiness and life satisfaction accounting for around half of an individual's variance in QOL (Day & Jankey, 1996). Research findings indicate that while most objective

socio-economic indicators improved in North America between 1957 and 1972, happiness declined (Campbell, 1976). Surprisingly, the proportion of the population who described themselves as “very happy” declined most noticeable for the part of the population who were most affluent. (Campbell, Converse & Rodgers, 1976). Further doubt on the efficacy of objective measures to assess the HRQOL of individuals is supplied by (Pearlman & Uhlmann as cited in Zhan, 1992), who found only a weak correlation ($r=0.15-0.31$) of physicians HRQOL rating of patients compared to the patient’s own HRQOL rating, when using the same scale. The patients consistently rated their HRQOL higher than the physicians estimate.

Revicki et al. (2000) propose that HRQOL is best determined by the analysis of subjective information gathered to illustrate HRQOL across many domains. Accordingly, HRQOL is explained by Revicki and colleagues as the subjective assessment of disease and treatment across domains of interest and as such is a multi-faceted construct. Opinion is divided as to how many domains are required assess overall HRQOL, with two domains: psychological and physical considered adequate by some researchers (Guyatt, Feeny & Patrick, 1993) to three domains by others: physical, psychological and social (Leidy, Revicki & Geneste, 1999) to the six domains considered necessary by the World Health Organisation to comprehensively assess HRQOL: physical, psychological, independence, social, environmental and spiritual (Saxena & Orley, 1997). Campbell (1976) also supports the view that it is the subjective

individual view of HRQOL that is of prime interest to psychology, for as he opines:

‘...subjective measures will surely not have the precision of indicators that are expressed in numbers of dollars, units of time, or numbers of square feet, but they will have the great advantage of dealing directly with what it is we want to know, the individuals sense of well-being’ (p. 118)

The present study conforms to the view that HRQOL is best measured via subjective information (Revicki et al., 2000), and therefore the WHOQOL-BREF was used to gather information. The WHOQOL-BREF harvests subjective information which is analysed across four domains: physical, psychological, social and environmental (Murphy, Herrman, Hawthorne, Pinzone & Evert, 2000). For the sake of this study, the World Health Organisation definition of QOL is used (Saxena & Orley, 1997, p. 263):

Individuals perception of their position in life in the context of culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It is a broad ranging concept affected in a complex way by the persons’ physical health, psychological state, level of independence, social relationships and their relationship to salient features of their environment.

This definition of HRQOL was collaboratively developed in many World Health Organisation Quality of Life centre’s worldwide. These centre’s were chosen to

provide a representative sample which included various levels of industrialisation, the availability and quality of healthcare, various religious beliefs, the role of the family in society among other variables (WHOQOL Group, 1998). The World Health Organisation considers HRQOL a subjective construct, with individual's assessing their individual HRQOL along various domains. HRQOL is conceptualised as a multidimensional construct, with information collected across various domains necessary to gain a comprehensive understanding of an individual's HRQOL (Saxena & Orley, 1997). The various WHOQOL domains: physical, psychological, independence, social, environmental and spiritual were developed by experts in the QOL field, whose proposals were then evaluated by lay people, both healthy and unhealthy, as well as clinicians and medical staff at the various contributing World Health Organisation centers. It was at the insistence of the lay people consulted, that the spiritual domain was included (Saxena & Orley, 1997).

Recent New Zealand research, revealed that approximately 70% of participants aged from 50 to 94 years volunteered their time and expertise to organisations and activities on a regular basis (Shepherd, 2009). This project determined a significant positive relationship between volunteer activity and three of four domains of interest, physical, psychology and environment and not social, which was maintained despite the influence of potential confounding variables age and gender. This level of volunteer participation reflects a strong tradition of volunteering in older age which is apparent in North America (Thoits

& Hewitt, 2001), Europe (McMunn, Nazroo, Wahrendorf, Breeze & Zaninotto, 2009) and Asia (Schwingel, Niti, Tang & Ng, 2009).

Employment in older age is also common, with approximately 20% of elderly aged between 50 and 94 years undertaking regular paid employment in a recent New Zealand study (Shepherd, 2009). With this in mind, the aim of this research project is to determine whether any HRQOL benefits are accrued to elder participants by undertaking paid employment or volunteer activity. Should HRQOL benefits be revealed, additional tests will be performed to determine whether the benefits are actually engendered by the volunteer activity or paid employment, or whether potentially confounding variables are responsible for this enhanced HRQOL. Four potential confounding variables will be assessed: age, gender, and income as well as participant religious belief.

Methods

Participants

The age inclusion criterion for this study was 50 years and over. As part of a large study, ethical approval had been granted from the Auckland University of Technology ethics committee to draw participants from community groups and organisations. Community organisations such as churches and activity groups such as *Sixties Up* were purposely approached to facilitate rapid data collection. All of the churches approached and 50% of the activity groups and clubs agreed to allow their members to be approached and canvassed as potential

participants. In total, 23 organisations, comprising of 14 *Sixties Up* branches, one senior citizens club, seven churches and one *Probus* club participated. From these organisations 552 questionnaires were returned, 543 of which were valid.

Instrument

The questionnaire used was the WHOQOL-BREF New Zealand version (Billington, Hsu, Krägeloh, Shepherd & Landon, 2010), (Appendix A). The WHOQOL-BREF is a 26-item instrument that assesses the subjective, self reported quality of life of participants along four separate domains: physical, social, psychological and environmental QOL (WHOQOL Group, 1998). The first two items address overall QOL, “How would you rate your quality of life?” and “How satisfied are you with your health?”. Seven items relate to physical health, six items to psychological health, three items to social relationships and eight to environmental health. For example, item four asks, “To what extent do you need any medical treatment in your daily life?” and addresses the physical health domain. Participants rate each item on a five-point Likert scale, with participants asked to answer each question in relation to how they have experienced life over the previous two weeks. The WHOQOL-BREF is designed for both interviewer administration and participant administration. If the WHOQOL-BREF is interviewer administered it take between 10 and 15 minutes. Self administration take approximately five minutes (Murphy, Herrman, Hawthorne, Pinzone & Evert, 2000).

The WHOQOL-BREF yields a multi-dimensional profile. The four domains provide scores ranging from 0-100, with higher scores denoting higher QOL (Murphy, Hermann, Hawthorne, Pinzone & Evert, 2000). Before the domain scores are tabulated, negatively worded items, 3, 4 and 26 are reverse coded. Domain raw scores are obtained by summing the items pertinent to each domain. Raw scores are then transformed to a scale ranging 0-100 to facilitate comparison with other datasets. This transformation is achieved by subtracting the lowest possible raw score from the actual domain score. The resultant figure is then divided by the range of the domain scores. For example, the lowest possible raw physical domain result is seven and the possible raw physical domain range is 28. Next the lowest possible score for the domain is subtracted from the actual score. Multiplying the resultant figure by 100 provides the transformed domain score.

Procedure

A branch of the Citizens Advice Bureau was contacted and information on clubs that catered for older New Zealanders was sought. Information received lead to *Sixties Up* club, Senior Citizens club and the *Probus* club. An internet search engine was used to source the contact details of the various organisations. Officials identified by the internet search were contacted and requests were made to either attend club meetings in person to address the club members, or post out questionnaires complete with return address envelopes. Presentations were made to six, *Sixty Up* clubs in the Auckland region with questionnaires posted out,

North Island wide to eight more. Questionnaires were posted to the *Probus* club and also to the Senior Citizens club. The churches, both in various Auckland suburbs and a rural service town, Dargaville, were approached by the researcher and requests made to mingle with the congregation at the end of Sunday services, with the aim of recruiting participants. Only 14 of the questionnaires were completed at the time of distribution, all of these were completed with the assistance of the interviewer. The rest were issued with self-addressed envelopes to be filled out and returned at the participant's leisure.

Data Analysis

Data Analyses were undertaken using SPSS Version 16.0 (SPSS, 2008). Group comparisons of the WHOQOL-BREF domain scores were conducted using univariate analysis as all analyses were undertaken while controlling for covariates. Additional analyses were undertaken using hierarchical regression analyses. Pearson *r* correlations were undertaken where correlations were used. Bonferonni analysis was undertaken where post hoc tests were undertaken. For all analyses, probability values below 0.05 were considered statistically significant.

Results

A total of 552 questionnaires were returned or collected, of which nine were rejected due to missing data. Of the 543 valid forms, 352 were completed

by females and 170 by males. The mean age of the participants was 74.45 years ($SD=8.02$), with the mean age for females being 74.63 ($SD=7.66$) and males 73.96 ($SD=8.82$). The participants ranged in age from 51-96 years. A total of 354 participants indicated they were involved in volunteer activities, 227 females and 113 males. A total of 73 participants indicated they were in paid employment, 38 females and 38 males. A total of 48 participants were involved in both volunteer activity and paid employment, and 160 participants were involved in neither work nor volunteer activity.

The majority of the participants who volunteered, 58.8% indicated that they did so to contribute to society, followed by the reason of friendship, to be active, other and fun (Table 1). Participants were asked to choose one main reason for volunteering.

Table 1

Reasons for Volunteering Overall and by Gender

	Overall	Male	Female
Contribute to society	198	69	121
Friendship	67	14	49
To be active	59	20	39
Other	7	2	5
Fun	6	2	4
Total	337	107	218

Participants who volunteered were asked to report how many hours per week they volunteered. Approximately 75% of the participants indicated they volunteered between one and nine hours per week, 17% volunteered between 10 and 19 hours per week (Table 2). Only 1% of those who volunteered did so for more than 40 hours per week.

Table 2

Hours Volunteered Overall and by Gender.

	Overall	Male	Female
1-9	262	81	170
10-19	60	24	36
20-29	15	4	10
30-39	6	3	2
>40	4	1	2

Table 3 shows the income overall and by gender, 36.1% of the participants recorded an income of between 0 and \$19,999, 39.8% between \$20,000 and \$39,999. Only 1.8% achieved an income over \$100,000.

Table 3

Income per Annum Overall and by Gender

Income	Overall	Male	Female
0-19999	196	50	142
20000-39999	216	77	128
40000-59999	56	20	34
60000-79999	17	14	3
80000-99999	10	3	7
100000>	10	2	8

Of the participants, 73 were in paid employment, 33 males and 38 females.

Income was the main reason for undertaking paid employment, followed by to be active (Table 4).

Table 4

Reason for Undertaking Paid Employment, Overall and by Gender.

	Overall	Male	Female
Income	40	20	18
To be active	20	10	10
Friendship	4	0	4
Contribute to society	5	1	4
Other	4	1	3

Of the participants who undertook paid employment, 19 participants worked 10-19 hours per week and 19 participants worked over 40 hours per week. Three males reported working between 1 and 9 hours per week and 11 females (Table 5).

Table 5

Hours Employed per Week Overall and by Gender.

Hours worked	Overall	Male	Female
1-9	14	3	11
10-19	19	8	10
20-29	10	3	7
30-39	11	4	6
40>	19	12	7

Correlations undertaken between the extent of an individual's religious belief, extent of the participants involvement in a religious community and the four WHOQOL-BREF domains, physical, psychological, social and environment. Significant results were obtained for the correlation between the .religious belief and religious community and the psychology and social domain

With regard to income and age, when correlated with the four WHOQOL-BREF domains, weak correlations were revealed in the physical, psychological and environment domains when correlated with income. With respect to age, a weak negative correlation was reported in the physical domain, with older participants experiencing a reduced HRQOL (Table 6).

Table 6

Correlations Between Religious Belief and Religious Community, Age, Income and the Four WHOQOL-BREF Domains.

	Physical	Psychology	Social	Environment
Religious Person	$r=.03, p=.57$	$r=.11, p=.01^*$	$r=.12, p=0.00^{**}$	$r=.03, p=.55$
Religious Community	$r=.025, p=.56$	$r=.15, p=.001^{**}$	$r=.10, p=.02^*$	$r=.07, p=.11$
Age	$r=-.21, p=.00^{**}$	$r=-.4, p=.33$	$r=.02, p=.64$	$r=.15, p=.73$
Income	$r=.18, p=.00^{**}$	$r=.10, p=.03^*$	$r=.04, p=.33$	$r=.24, p=.00^{**}$
<i>Note</i> * Significant at $p<0.05$ ** Significant at $p<0.01$				

Univariate analysis was undertaken with religious person as the dependent variable and an independent variable consisting of participants grouped into four subsets: those who were employed, those who volunteered those who were employed and volunteered and those who neither worked nor volunteered. A significant group effect was obtained ($F(537)=8.70, p<0.01$). Subsequent Bonferroni post-hoc, analysis showed a significant result to $p<0.05$ between those who neither volunteered nor worked and those who volunteered Table 7 shows means and standard deviations of the four subsets.

Table 7

Means and Standard Deviations of Four Subsets of Participants by Involvement Activity.

Category	<i>M</i>	<i>S</i>
Volunteer	2.92	1.20
Paid Employment	2.56	1.23
Vol. and Employ.	3.08	1.35
Neither Vol. nor Employ.	2.38	1.12

(Table 8) Hierarchal regression was undertaken to assess the effects of potential confounding variables, age, gender, income, extent of religious belief and paid employment above and beyond the effect of volunteering for the physical domain. Volunteering was coded 1 for yes and two for no. Age ($\beta = -0.19$, $p = .00$) and income ($\beta = 0.18$, $p = .00$) were significant. Gender ($\beta = 0.08$, $p = .06$), extent of religious belief ($\beta = -0.08$, $p = .07$) and employment status ($\beta = -0.03$, $p = .58$) were not significant. Physical status decreased with age and increased with higher income. An independent *t*-test showed that those who volunteered demonstrated a significant advantage in HRQOL for the physical domain $p < 0.05$.

Table 8

Results from Hierarchical Multiple Linear Regression Investigating the Effects of the Variables Volunteer Status, Employment Status, Age, Gender, Income and Religious Belief on the Physical Domain

	Unstandardised Coefficients		Standard Coefficients		<i>p</i>
	<i>B</i>	Std. Error	<i>Beta</i>	<i>t</i>	
Constant	103.43	7.88		13.12	.000
Age	-0.38	0.10	-0.19	-3.79	.000**
Gender	2.86	1.53	0.08	1.87	.062
Income	2.76	0.71	0.18	3.91	.000**
Religious	-1.08	0.60	-0.08	-1.81	.071
Volunteer	-7.51	1.53	-.217	-4.91	.000**
Work	-1.30	2.37	-0.03	-.55	.583

Note * Significant at $p < 0.05$

** Significant at $p < 0.01$

Hierarchical linear regression was undertaken to determine the effects of potential confounding variables age, gender, income, extent of religious belief and paid employment above and beyond the effects of volunteering for the psychology domain. Volunteering was coded one for yes and two for no. Gender ($\beta = 0.09$, $p = .04$) and income ($\beta = 0.11$, $p = .02$) were significant. The extent of religious belief ($\beta = 0.06$, $p = .172$), employment ($\beta = 0.00$, $p = .94$) and age ($\beta = -0.61$, $p = .55$) were not significant. Increased income supported enhanced HRQOL. An independent *t*-test demonstrated males experienced enhanced HRQOL when compared to females for the psychology domain $p < 0.05$ (Table 9).

Table 9

Results from Hierarchical Multiple Linear Regression Investigating the Effects of the Variables Volunteer Status, Employment Status, Age, Gender, Income and Religious Belief on the Psychological Domain

	Unstandardised Coefficients		Standard Coefficients		<i>p</i>
	<i>B</i>	Std. Error	<i>Beta</i>	<i>t</i>	
Constant	73.54	6.92		10.63	.00
Age	-0.05	0.09	-0.30	-0.61	.55
Gender	2.76	1.34	0.90	2.05	.04*
Income	1.40	0.62	0.11	2.26	.02*
Religious	0.71	0.52	0.06	1.37	.172
Volunteer	-5.49	1.34	-0.19	-4.09	.00**
Work	0.16	2.08	0.00	0.08	.94

Note * Significant at $p < 0.05$

** Significant at $p < 0.01$

(Table 10) Hierarchal linear regression was undertaken to determine the effects of potential confounding variables age, gender, income, extent of religious belief above and beyond the effect of volunteering for the social domain. Volunteering was coded 1 for yes and 2 for no. Extent of religious belief was significant ($\beta = 0.11$, $p = .02$) Age ($\beta = 0.06$ $p = .23$), gender ($\beta = -0.03$, $p = .58$), employment status ($\beta = -0.40$, $p = .46$) and income ($\beta = 0.06$, $p = .23$). Increased religious belief was associated with enhanced HRQOL for the social domain.

Table 10

Results from Hierarchical Multiple Linear Regression Investigating the Effects of the Variables Volunteer Status, Employment Status, Age, Gender, Income and Religious Belief on the Social Domain

	Unstandardised Coefficients		Standard Coefficients		<i>p</i>
	<i>B</i>	Std. Error	<i>Beta</i>	<i>t</i>	
Constant	60.22	9.50		6.34	.00
Age	0.15	0.12	0.06	1.20	.23
Gender	-1.01	1.83	-0.03	-0.55	.58
Income	1.04	0.86	0.06	1.21	.23
Religious	1.70	0.71	0.11	2.37	.02*
Volunteer	-0.74	1.85	-0.02	-0.40	.70
Work	-2.07	2.82	-0.40	-0.73	.46

Note * Significant at $p < 0.05$

** Significant at $p < 0.01$

(Table 11) Hierarchical linear regression was undertaken to determine the effect of potential confounding variables, age, gender, income, extent of religious belief and paid employment over and above the effect of volunteering for the environment domain. Income was significant ($\beta = 0.27, p = .00$). Age ($\beta = 0.02, p = .69$), gender ($\beta = 0.06, p = .18$), extent of religious belief ($\beta = -0.13, p = .78$) and employment ($\beta = 0.03, p = .57$) were not significant.

Table 11

Results from Hierarchical Multiple Linear Regression Investigating the Effects of the Variables Volunteer Status, Employment Status, Age, Gender, Income and Religious Belief on the Environment Domain.

	Unstandardised Coefficients		Standard Coefficients		<i>p</i>
	<i>B</i>	Std. Error	<i>Beta</i>	<i>t</i>	
Constant	69.68	6.63		10.50	.000
Age	0.03	0.09	0.02	0.40	.69
Gender	1.74	1.29	0.06	1.35	.18
Income	3.50	0.60	0.27	6.00	.00**
Religious	-0.14	0.50	-0.13	-0.29	.78
Volunteer	-4.13	1.29	-0.15	-3.21	.00**
Work	1.15	2.00	0.03	0.58	.57

Note * Significant at $p < 0.05$

** Significant at $p < 0.01$

Employment was not significant in the physical, psychological, social or environment domain ($p > 0.05$).

This study builds on previous research which assessed the effects of volunteering and paid employment on the HRQOL of older New Zealanders. The participants for the previous study were drawn from a separate but similar participant pool. To enhance the validity of the present study, univariate analyses was undertaken with the present dataset which replicates the analyses undertaken in the previous study. With respect to volunteering, both tests were significant in the same domains, physical, psychological and environment. With regard to paid employment, the present study reveals no significant result across the four domains. The previous study showed a negative significant result for the

environment domain. For the covariates, age and gender were both significant for the physical domain across both studies and with few exceptions results were matched across the other three domains (Appendix B).

Discussion

The purpose of the present study was to investigate the link between employment, volunteering and the HRQOL of older participants. The HRQOL of participants was measured using the New Zealand version of the WHOQOL-BREF instrument (Billington, Hsu, Krägeloh, Shepherd & Landon, 2010) which measures HRQOL as a four-domain profile, consisting of physical, psychological, social and environmental HRQOL. Four potential confounding variables were controlled for when testing the relationship between volunteering and paid employment on the HRQOL domains: age, gender, income and extent of religious beliefs. Information was collected as to the amount that participants felt they were part of a religious community, however this variable was removed as it was highly correlated with extent of religious belief. Purposive data collection ensured that a comprehensive dataset was collected which reflected the studies aims, for example churches were targeted as recruitment centres to ensure some of the participants could be expected to hold high personal religious belief. Results demonstrated that volunteering was significant for the physical, psychological and environment domain. Paid employment was not significant for any of the domains.

While ethics approval was obtained to recruit participants aged from 50 years old and upwards, strenuous efforts were undertaken to recruit as representative sample of retirement age people as possible. Replication of previous research (Shepherd 2009) was undertaken with results indicating a robust relationship between the present and previous research. While participants from both studies were recruited from similar venues, care was taken with the present study to ensure as many participants as possible were representative of post-65 years retirement age people. This is reflected in the mean age for the present study being over 74 years. Volunteering produced significant results for the same three domains in both studies: physical, psychology and environment. In the 2009 study, paid employment produced a negative significant result for the environment domain which was not replicated in the present project. The two potential confounding variables tested, age and gender also produced similar results across the two analyses.

In the present study, volunteer activity was significant in the physical, psychology and environment domains and was maintained in the presence of significant confounding variables (Tables 8-9, 11). This result is in accordance with previous research undertaken by the author which also demonstrated a significant link between volunteering and physical health (Shepherd, 2009). With respect to the physical domain, this result is supported by research undertaken by (Borgonovi, 2008) who established a link between volunteering activity and physical health. As with the present study, income was considered

as a potential confounding variable. However recruitment was from church groups only, unlike the present study which recruited from both church groups and secular organisations. Luoh & Herzog (2002) also report that enhanced physical HRQOL could be demonstrated by those who undertook volunteer activity using three measures, subjective self report, objective daily functioning measures and mortality and morbidity statistics. These results were obtained by examining North American data collected longitudinally in three waves, 1993, 1995 and 1998 and involved participants who were born on or before 1923. The enhanced physical association with volunteer activity was maintained in the presence of potentially confounding variable, age, gender, marital status, race, religiosity and social contact. Results from a large cross-sectional survey in North America also support the proposition that volunteering is associated with health benefits with volunteers experiencing extended mortality when compared to non volunteers. In this survey potential confounding variables including religious belief and physical functioning were considered (Oman, Thoresen & McMahon, 1999).

With regard to the significant psychology domain result, the literature consistently supports the view that volunteering supports positive mental health and well-being. Wahrendorf, Knesebeck and Siegrist (2006) propose that volunteer activity strengthens the sense of well-being for older volunteers, especially if the volunteer believes the volunteer activity is valued by society and is of a reciprocal nature. This study however failed to allow for any potential

confounding variables. Cnaan and Goldberg (1991), in meta-analysis to determine why volunteer activity is undertaken, propose that “feeling better about myself” is in the top ten reasons why individuals volunteer. Morros, Pushkar and Reis (1998) propose that those who volunteer achieve high ego developmental status, due to the volunteers having to face and overcome challenging experiences and new environments, enhancing their mental health and well-being. The result also conforms to activity theory which proposes that HRQOL in retirement is enhanced if activity, in particular social activity is maintained.

Volunteer activity was significant for the environment domain which corresponds with research undertaken by the researcher previously (Shepherd, 2009). Morrow-Howell (2007), suggests that well resourced individuals, white female and married are more likely to volunteer. Income, education and occupational class are also all related to positive health outcomes (Babones, 2010). Perhaps the well resourced nature of most volunteers is reflected in enhanced environment conditions.

With regards to paid employment however, paid employment was not significant for any of the four domains: physical, psychological, social nor environmental. This result finds some support in the literature with several studies proposing no link between paid employment and HRQOL. No

psychological benefit was revealed in North American research into the benefits of paid employment (McIntosh & Danigelis, 1995). As Fengler (1984) notes employment alone is not an indicator of enhanced HRQOL for older folk where other personal or social resources are available. Given that a majority of participants in this study were recruited through clubs and churches, perhaps social and personal resources were available through involvement in activities provided by these organisations. In addition, while individual income for participants in this study appears low, no attempt was made to assess household income; perhaps household income was sufficient for a majority of the participants to enjoy high HRQOL. Another consideration is that participants may be earning income from the grey economy and be reluctant to admit that.

The positive relationship between volunteering and HRQOL was maintained in the presence of significant potential confounding variables. Income was a significant covariate for the physical, the psychological as well as the environment domains. This result conforms to the literature which almost without exception states that increased income is associated with enhanced HRQOL (Shkolnikov, Scholz, Jdanov, Stegmann & von Gaudecker, 2007; Low, Molzahn & Kalfoss, 2008). A counter argument however, can be found in North American study which shows that household income is not a significant HRQOL indicator in Canada, while being significant in North America (Huhuet, Kaplan & Feeny, 2008). The authors posit that equitable access to state provided health care in Canada may contribute to household income not being an important

variable for elderly Canadians HRQOL compared to North Americans user pays health system, which may involve a reduction of access to health care as health insurance premium costs become prohibitive in retirement. It could be argued that New Zealand's state funded health system should result in HRQOL outcomes similar to Canada's. However, in New Zealand there is still a cost to the client, which given the apparent low income of most of the participants in this survey may result in lesser resourced individuals delaying accessing healthcare, or choosing not to access healthcare (Hefford, Crampton & Foley, 2005).

Research indicates income may only enhance HRQOL up to a point. Recent Canadian research indicates that levels of emotional well-being are correlated with household income up to an income of \$C75.000. Household income beyond this figure did not increase emotional well-being. Well-being was ascertained by the frequency and intensity of experiences of joy, stress, sadness, anger and affection that made the participants life pleasant or unpleasant (Kahneman & Denton, 2010). Wilkinson & Pickett (2010) in happiness research undertaken in North America, propose that an annual individual income of \$A25.000 results in optimal happiness, with income beyond this figure not further enhancing happiness.

The covariate religion was significant in the social domain and not significant for the physical, psychology and environment domain. This mixed result is confirmed in the literature with some research showing religious belief

and participation as being associated with positive HRQOL outcomes (Idler, 1987; Ellison, 1991). It could be expected that the opportunity for social discourse and activity is facilitated by religious activity and that psychological health could be enhanced by the thought of a benevolent loving god. This also conforms to Continuity theory which proposes that successful aging entails maintaining the thoughts and patterns of behaviour of mid-life. Perhaps church involvement provides a link between mid and old-age. Not all thinkers agree with a positive relationship between religious belief and HRQOL. Freud and Marx described religious belief and its effect on life and cognitive functioning as negative, with Freud describing religious belief as a neurosis (Ferraro & Albrecht-Jensen, 1991).

Levin and Markides (1986) in a study involving American-Mexican Catholics, posit that increased hypertension rates in older females may be due to guilt experienced through trying to conform to strict religious norms. HRQOL may be threatened by involvement in some religious organisations such as Jehovah Witnesses and Christian Scientists, which forbid certain types of medical interventions such as blood transfusions (Ferraro & Akbrecht-Jensen, 1991). Makros and McCabe (2003), found in research with those who were afflicted with Multiple Sclerosis that participants who harboured high intrinsic religious belief reported high levels of depression and decreased QOL when compared to those participants who did not embrace high intrinsic religious belief. Participants with high intrinsic belief described their religious belief as being of ultimate value, suffusing their whole life and being a prime motivating

force in life. With respect to the present study, perhaps religious participation enhanced HRQOL through the effect of social capital built up through participation in religious activities (Greeley, 1997). In addition, as (Pargament, Smith, Koenig & Perez, 1998) propose, positive religious coping patterns which mitigate adverse life events may contribute to enhanced HRQOL.

The third covariates tested, age was significant for the physical domain and not significant for the remaining three domains, psychological, social and environment. A Pearson correlation revealed a moderate negative association with age and the physical domain which demonstrated that physical HRQOL reduced with age. This result is also reflected in the literature which illustrates a decline in physical ability as people age (Fayers, 2001). Zaninotto, Falaschetti & Sacker (2009) propose that a decline in later years is inevitable; however participation in HRQOL enhancing activities such as physical activity, outdoor activities and volunteering may act to slow this rate of decline. It would be of interest to compare the HRQOL of elders who volunteer with those of the same age who do not volunteer due to living rurally for example, to further explore this link. While it could have been expected that age would have been significant in the psychological, social and environment domains, this was not shown. This may be due to the purposeful nature of recruitment to this study, with most participants garnered from religious organisations or community clubs. Perhaps those individuals able to attend these organisations have abilities beyond that which would be expected from a more representative sample.

Gender, the fourth covariate tested, was also significant as a covariate in the psychological domain with males recording higher levels of HRQOL than females. Gender was not significant in either the physical, social or environment domain. While the literature predominantly supports this result, with several studies showing that males enjoy a higher HRQOL than females of the same age (Orfila, Ferrer, Lamarca, Tebe, Domingo-Salvany & Alonso, 2006; Borglin, Jakobsson, Edberg & Hallberg, 2005), this finding is not universal. For example, longitudinal research undertaken in North America shows that males experience reduced HRQOL when compared to females. Participants in this study were aged 65 years and over and the gender effect was consistent through all age bands (Shye, Mullooly, Freeborn & Pope, 1987). Researchers propose that elderly males have less close friends than males and a different communication style, with females likely to feel more comfortable undertaking intimate conversations including disclosure than males (Antonucci and Akiyama, 1987). Umberson (1992) proposes that women more readily support health care among their friends and facilitate access to health clinics within their social group than do males. Recent New Zealand research undertaken by the author also showed that females experienced a higher HRQOL than males (Shepherd, 2009). Spiers, Jagger, Clarke & Arthur (2003) suggests that due to men being socialised to downplay physical pain and discomfort, they may report symptoms similar to those being experienced by women with less severity, therefore skewing results.

The age cohort studied in the present research project, the silent generation (born 1925-1945) has been characterised as being hardworking, dependable and supportive of conservative values such as loyalty, duty, conformity and security (Egri & Ralston, 2004). These characteristics lend themselves to a culture of volunteering and service. The mean age of the participants in this study is 74.4 years old; therefore the mean birth year is 1936, approximately the middle of the silent generation cohort. It remains to be seen whether the baby boom generation (born 1946-1964), with its emphasis on the individual, competition and self-fulfillment (Egri & Ralston, 2004) will engage in volunteer activity to the extent that previous generations have.

Limitations

The present study is cross-sectional in design and as such no causal links can be proposed. While efforts were made to include indigenous as well as Asian and Pacific Island peoples, the study can-not claim to represent the general New Zealand elderly population. Also purposeful sampling, undertaken in order to facilitate speedy data collection, resulted in garnering participants from populations which may well be more active and with a higher overall HRQOL than the general elderly population. More comprehensive representative sampling and research undertaken longitudinally may address these concerns. In addition, subjective recall of the amount of hours the participants reported as being involved in paid employment and volunteer work may be inaccurate. As (Thoits and Hewitt, 2001) note, recall problems may depress the number of hours reported, precision and social desirability may inflate the number of hours

reported. Perhaps in depth qualitative research could address this concern as well as tease out individual reasons for volunteering and maintaining paid employment.

Conclusion

For the present study, volunteering was seen to be associated with enhanced HRQOL across three of the four domains tested, physical, psychological, social and environment. Volunteering was not associated with enhanced HRQOL for the social domain. The positive effect was maintained in the presence of four potentially confounding variables, extent of religious belief, income, age and gender. The effect of paid employment was not associated with any changes in HRQOL for the four domains physical, psychological, social and environment. New Zealand elders are a major contributor through volunteer activity to the well-being of the nation.

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Appendix A

Participant Information Sheet**Date Information Sheet Produced:**

18/06/09

Project Title

Assessing quality of life in older people

An Invitation

You are invited to participate in a study which explores the quality of life and well-being among people aged 50 and over.

My name is Gregory Shepherd, and this study is the dissertation component of my Masters Degree in Psychology at Auckland University of Technology

What is the purpose of this research?

The objective of this study is to assess and measure the quality of life of people aged 50 and above. It is hoped that the findings of the study will be of great benefit and contribution to the advancement of welfare and well-being of individuals in this age group.

What will happen in this research?

If you decide you are interested in this research project, please read this information sheet. If you agree to participate, this will involve completing a questionnaire asking you about your quality of life. It should take approximately 25 minutes to complete.

Who can participate in this research?

Men and women who are aged 50 and over.

What are the benefits?

This research could be extremely significant to the general public, wider communities, in clinical settings and preventive interventions. The research may provide significant information which could contribute to policy development and guide practice in the area. Such research can help facilitate improvements in quality of life among older people.

How will my privacy be protected?

The questionnaire is anonymous and you are asked not to provide any distinguishing/identifying information.

What are the costs of participating in this research?

There are no costs to you other than your time. This is approximately 15 minutes.

What opportunity do I have to consider this invitation?

There is no obligation for you to complete the questionnaire. It is completely voluntary. If you decide to participate, please complete the questionnaire and return it as soon as possible.

How do I agree to participate in this research?

By completing the questionnaire and returning it to the researcher via pre-paid envelope, you are giving your consent to participate in this research.

Will I receive feedback on the results of this research?

Yes. A summary of results will be published on the New Zealand WHOQOL Centre website.

What do I do if I have concerns about this research?

Any questions or concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Daniel Shepherd (please see contact details below).

Concerns regarding the conduct of the research should be notified to the Executive Secretary, AUTECH, Madeline Banda (madeline.banda@aut.ac.nz), 09 921 9999 ext 8044.

Whom do I contact for further information about this research?

Researcher Contact Details:

Gregory Shepherd (Postgraduate Student)

Department of Psychology

Faculty of Health and Environmental Sciences, AUT University

Email: shepgg@yahoo.co.nz

Project Supervisor Contact Details:

Dr Daniel Shepherd (Senior Lecturer)

Department of Psychology

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Approved by the Auckland University of Technology Ethics Committee on 11/09/2008, AUTEK Reference number 08/114.

World Health Organization Quality of life

WHOQoL-BREF New Zealand Version (February 2010)

Instructions

This assessment asks how you feel about your quality of life, health, & other areas of your life. Please answer all the questions. If unsure about which response to give to a question, please choose the one that appears most appropriate. This can often be your first response.

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

Thank you for your help.

Please read each question and assess your feelings, for the last two weeks, and circle the number on the scale for each question that gives the best answer for you.

	Very poor	Poor	Neither Poor nor Good	Good	Very Good
How would you rate your quality of life?	1	2	3	4	5
	Very Dissatisfied	Fairly Dissatisfied	Neither Satisfied nor Dissatisfied	Satisfied	Very Satisfied
How satisfied are you with your health?	1	2	3	4	5

The following questions ask about how much you have experienced certain things in the **last two weeks**.

	Not at all	A Small amount	A Moderate amount	A great deal	An Extreme amount
To what extent do you feel that physical pain prevents you from doing what you need to do?	1	2	3	4	5
How much do you need any medical treatment to function in your daily life?	1	2	3	4	5
How much do you enjoy life?	1	2	3	4	5
To what extent do you feel your life to be meaningful?	1	2	3	4	5

	Not at all	Slightly	Moderately	Very	Extremely
How well are you able to concentrate?	1	2	3	4	5
How safe do you feel in your daily life?	1	2	3	4	5
How healthy is your physical environment?	1	2	3	4	5

	Not at all	Slightly	Somewhat	To a great extent	Completely
Do you have enough energy for every day life?	1	2	3	4	5
Are you able to accept your bodily appearance?	1	2	3	4	5
Have you enough money to meet your needs?	1	2	3	4	5
How available to you is the information you need in your daily life?	1	2	3	4	5
To what extent do you have the opportunity for leisure activities?	1	2	3	4	5

	Not at all	Slightly	Moderately	Very	Extremely
How well are you able to get around physically?	1	2	3	4	5

The following questions ask you to say how good or satisfied you have felt about various aspects of your life over the **last two weeks**.

Very Dissatisfied	Fairly Dissatisfied	Neither Satisfied nor Dissatisfied	Satisfied
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	Very Dissatisfied	Fairly Dissatisfied	Neither Satisfied nor Dissatisfied	Satisfied
How satisfied are you with your sleep?	1	2	3	4
How satisfied are you with your ability to perform your daily living activities?	1	2	3	4
How satisfied are you with your capacity for work?	1	2	3	4
How satisfied are you with yourself?	1	2	3	4
How satisfied are you with your personal relationships?	1	2	3	4
How satisfied are you with your sex life?	1	2	3	4
How satisfied are you with the support you get from your friends?	1	2	3	4
How satisfied are you with the conditions of your living place?	1	2	3	4
How satisfied are you with your access to health services?	1	2	3	4
How satisfied are you with your transport?	1	2	3	4

	Never	Infrequently	Sometimes	Frequently
How often do you have negative feelings such as blue mood, despair, anxiety, depression?	1	2	3	4

For this section, please circle the most appropriate answer.

27. Do you volunteer your time to any organisation or activity? If no, go to question 30.	Yes	No
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28. How many hours per week do you volunteer on average?	1-9	10-19	20-29	30-39	40 plus
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29. What is the main reason you volunteer? Please circle only one.	Fun	Friendship	To be active	Contribute to society	Other; specify
--	-----	------------	--------------	-----------------------	----------------

30. Are you in paid employment? If no, please go to question 33.	Yes	No
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31. How many hours a week do	1-9	10-19	20-29	30-39	40 plus
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you work?					
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32. What is the main reason you work? Please circle only one.	Income	Fun	Friendship	To be active	Contribute to society	Other: specify
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33. Are you married?	Yes	No
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34. What is your year of birth?	
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35. What is your gender?	Female	Male
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36. What is your income?	0-19999	20000-39999	40000-59999	60000-79999	80000-99999	100000 plus
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	Not at all	A little	A moderate amount	Very much	An extreme amount
37. To what extent do you have spiritual beliefs?	1	2	3	4	5

38. To what extent do you have strong personal beliefs?	1	2	3	4	5
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39. To what extent do you consider yourself to be a religious person?	1	2	3	4	5
---	---	---	---	---	---

40. To what extent do you consider yourself to be part of a religious community?	1	2	3	4	5
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Thank you for participating
THE END

Appendix B

Replication of previous research. Univariate analysis was undertaken using the four WHOQOL-BREF domains: physical, psychological, social and environment as the dependent variables and volunteering status and employment as the independent variables. Age and gender were entered as covariates. The effect of volunteering was significant for the physical domain ($F(501)=22.45$, $p<0.01$) the psychology domain ($F(498)=19.89$, $p<0.01$) as well as the environment domain ($F(501)=9.46$, $p<0.01$). The effect of volunteering was not significant for the social domain ($F(487)=.49$, $p>0.05$), (Table x). With regard to the covariates, age was significant for the physical domain ($F(501)=25.11$, $p<0.01$). Age was not a significant covariate for the psychology domain ($F(498)=1.32$, $p>0.05$) the social domain ($F(487)=.37$, $p>0.05$) nor the environment domain ($F(501)=.08$, $p>0.05$). The covariate gender was significant for the physical domain ($F(501)=5.33$, $p<0.01$) and the psychology domain ($F(498)=4.17$, $p<0.05$). The covariate gender was not significant for the social domain ($F(487)=.73$, $p>0.05$) or the environment domain ($F(501)=2.27$, $p>0.05$).

The effect of employment was not significant for the physical domain ($F(499)=1.24$, $p>0.05$) the psychology domain ($F(496)=.21$, $P>0.05$) the social domain ($F(485)=1.07$, $p>0.05$) nor the environment domain ($F(499)=.13$, $p>0.05$), (Table x). With regard to the covariates, age was significant for the physical domain ($F(489)=1.24$, $p<0.01$). The covariate age was not significant for the psychology domain ($F(496)=.21$, $p>0.05$) the social domain ($F(485)=1.2$,

$p>0.05$) nor the environment domain ($F(499)=.00, p>0.05$). The covariate gender was significant for the physical domain ($F(499)=4.56, p<0.05$). The covariate gender was not significant for the psychology domain ($F(496)=3.70, p>0.05$) the social domain ($F(485)=.90, p>0.05$) nor the environment domain ($F(499)=2.15, p>0.05$).

The means and standard deviations of research undertaken previously using a similar, though separate participant pool and identical independent variables and covariates age and gender shows that volunteering status was significant for the physical domain ($F(306)=10.70, p<0.01$). The effect of volunteer status was also significant for the psychological domain ($F(306)=4.74, p<0.05$) as well as the environment domain ($F(306)=6.69, p<0.05$). The effect of volunteering was not significant for the social domain ($F(302)=2.86, p>0.05$), (Table xx).

With regard to the covariates, the effect of age was significant for the physical domain ($F(306)=18.03, p<0.05$). The effect of the covariate age was not significant for the psychology domain ($F(306)=3.55, p>0.05$) the social domain ($F(302)=0.10, p>0.05$) nor for the environment domain ($F(306)=0.00, p>0.05$). Pearson r correlation demonstrated that for the physical domain, HRQOL diminished with age ($r=-.287, p<0.01$). With respect to the covariate gender, gender was significant for the physical domain ($F(306)=5.91, p<0.05$) and the social domain ($F(302)=16.69, p<0.01$). The effect of the covariate gender was

not significant for the psychology domain ($F(306)=1.28, p<0.05$) nor for the environment domain ($F(306)=1.27, p>0.05$). The gender female displayed superior HRQOL for the physical domain, male ($M=70.22, SD=14.07$), female ($M=73.90, SD=14.79$). The gender female also displayed superior HRQOL for the social domain, male ($M=70.08, SD=15.99$), female ($M=77.54, SD=16.37$).

The means and standard deviations of research undertaken previously using a similar, though separate participant pool and identical independent variables and covariates age and gender, shows that the effect of paid employment was significant for the environment domain ($F(297)=5.06, p<0.05$). The effect of paid employment was not significant for the physical domain ($F(297)=0.14, p>0.05$) the psychology domain ($F(297)=1.04, p>0.05$) nor for the social domain ($F(293)=1.67, p>0.05$). Within the environment domain, those employed showed a reduced HRQOL.

With regard to the covariates, age was significant for the physical domain ($F(297)=12.58, p<0.01$) and for the psychology domain ($F(297)=5.06, p<0.05$). The effect of the covariate age was not significant for the social domain ($F(293)=0.44, p>0.05$) nor for the environment domain ($F(297)=1.17, p>0.05$). Pearson r correlation demonstrated that for the physical domain, HRQOL diminished with age ($r=-.287, p<0.01$). Pearson r correlation demonstrated that for the psychology domain, HRQOL diminished with age ($r=-.140, p<0.01$). The effect of the covariate gender was significant for physical domain ($F(297)=5.16,$

$p<0.05$) and the social domain ($F(293)=14.71, p<0.05$). The effect of the covariate gender was not significant for the psychology domain ($F(297)=0.45, p>0.05$) nor for the environment domain ($F(297)=1.17, p>0.05$). The gender female displayed superior HRQOL for the physical domain, male ($M=70.22, SD=14.07$), female ($M=73.90, SD=14.79$). The gender female also displayed superior HRQOL for the social domain, male ($M=70.08, SD=15.99$), female ($M=77.54, SD=16.37$).

Table

Mean and Standard Deviation Scores of the WHOQOL-BREF Domain Scores by Volunteer Status with Gender and Age Entered as Covariates

	Volunteer			Non Volunteer		
Domains	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Physical	327	70.98	14.98	175	63.96	18.62**
Psychology	327	72.62	13.25	175	66.83	15.01**
Social	324	72.04	17.91	164	70.78	20.42
Environment	327	78.68	13.06	175	74.75	14.63**

Note *Significant at $p<0.01$
 **Significant at $p<0.05$

Table

Mean and Standard Deviation Scores of the WHOQOL-BREF Domain Scores by Employment Status with Gender and Age Entered as Covariates

	Employed			Not Employed		
Domains	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Physical	68	75.05	15.89	432	67.58	16.566
Psychology	68	72.49	13.93	432	70.34	14.19
Social	68	72.67	16.47	418	71.43	19.15
Environmental	68	78.22	13.81	432	77.16	13.77

Table

Mean and Standard Deviations of 2009 Original Research Domain Scores by Volunteer Status with Gender and Age Entered as Covariates

Domains	Volunteer			Non volunteer		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Physical	232	74.11	14.11	75	67.14	15.04**
Psychological	232	74.91	11.34	75	71.06	14.14*
Social	230	75.21	15.77	73	71.80	18.41
Environmental	232	81.34	11.34	75	77.21	13.93*

*Significant at $p < 0.05$

**Significant at $p < 0.01$
(Shepherd, 2009).

Table

Mean and Standard Deviations of 2009 Original Research Domain Scores by Volunteer Status with Gender and Age Entered as Covariates

Domains	Employed			Not employed		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Physical	70	76.79	12.87	228	71.15	14.94
Psychological	70	74.29	11.44	228	73.78	12.43
Social	69	72.58	14.65	225	75.59	16.36
Environmental	70	78.39	12.30	228	81.28*	11.89

*Significant at $p < 0.05$.
(Shepherd, 2009).