Examining demographic and psychosocial predictors of well-being in older pet owners

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ABSTRACT

Background: Worldwide, older adults represent a significant proportion of the total population. Due to the international increase in the numbers of aging adults over the next several decades, it is important for nurses to assist this populace in aspects of healthy aging. There are known indicators of well-being both positive and negative that influence aging. Objective: The objective of this study was to examine seven models consisting of demographic and psychosocial predictors of well-being among older adults. Population: This quantitative descriptive design included 209 older pet-owning adults whose age ranged from 48 to 93 (M = 71.66; SD 9.14). The participants were recruited from senior housing facilities designed for older adults or attended a senior citizen community centre.

Methods: Participants completed a demographics form and a loneliness, pet attachment, social support, and well-being scale. Demographic and psychosocial predictors of well-being were examined using hierarchical regression analysis (p < .05).

Results: The results revealed that age, gender, education, health, loneliness due to the loss, pet type, loneliness, social support, and pet attachment were significant predictors. Older adults are at risk for less than optimal well-being due to situational factors such as loneliness and alternations in social support due to natural life transitions. Since well-being is a multidimensional construct that affects the world's people it is important for nurses to investigate its components.

Conclusion: Internationally, nursing is focused on maintaining positive health and well-being throughout the lifespan. The findings supported both positive and negative components influence well-being. Appropriate interventions should be selected based on positive or negative predictors. Implications for clinical application are discussed.

Keywords: *Nursing; well-being; older adults.*

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Background:

Worldwide, older adults represent a significant proportion of the total population. According to the World Health Organization (WHO; 2011) the world's population aged 60 and over will more than triple to 2 billion by 2050. The majority of the older adult population increase is occurring in developing countries with low levels of material well-being and this populace is expected to rise from 400 million in 2000 to 1.7 billion by 2050 (WHO, 2011).

In the United States older adults age 65 and older represented 13 percent of the total population corresponding to approximately 40 million people (Federal Interagency Forum on Aging-Related Statistics; FIFARS, 2012). It is projected that in 2030 the older adult population will grow to 72 million thereby representing nearly 20 percent of the total U.S. population (FIFARS, 2012). By 2050, the number of Americans aged 65 and older is projected to be 88.5 million (U.S. Department of Commerce Economics and Statistics Administration, 2010).

Due to the international increase in the numbers of aging adults over the next several decades, it is important for nurses to assist this populace in aspects of healthy aging. There are known indicators of well-being both positive and negative that influence aging. As a result, nurses can address these positive and negative indicators in order to globally improve the well-being of older adults.

Accordingly, well-being is a new topic area for Healthy People 2020 (U.S. Department of Health and Human Services, 2013). Moreover, four foundation health measures have been identified to help promote health, prevent disease and disability, eliminate disparities, and improve quality of life over the next 10 years (U.S. Department of Health and Human Services, 2013). One identified foundation health measure is well-being. Over the next decade, Healthy People 2020 will evaluate and monitor well-being in the United States and will "assess the positive evaluations of people's daily lives – when they feel very healthy and satisfied or content with life, the quality of their relationships, their positive emotions, resilience, and realization of their potential" (U.S. Department of Health and Human Services, 2013). The key indicators of well-being have been identified for older Americans can also be translated globally.

Literature Review

Well-being

Well-being is theoretically described as a highly desirable condition that consists of a sense of joy, satisfaction, and a keen sense of awareness (Bradburn, 1969; Campbell, 1981). Diener (1984) explained that well-being is a multidimensional construct that includes positive and negative affect and life and domain satisfactions and for the purpose of this study includes anxiety, depressed mood, positive well-being, self-control, health, and vitality.

Well-being is a meaningful construct for clinical application just as other concrete health indicators are since well-being is a construct made up of both positive and negative health-related components. Since well-being is theorized to be a multidimensional construct, it is important to examine the components of the construct and the psychosocial predictors (e.g. loneliness, pet attachment support and social support).

Loneliness

Weiss (1973) proposed that aspects of well-being are negatively impacted by psychosocial concepts such as loneliness. Loneliness is an affect within the awareness of the individual that appears as a sense of incompleteness and a longing for or yearning for another individual (Leiderman, 1969). Weiss (1969) posited that relationships, whereby individuals can express their feelings freely and without self-consciousness, prevent feelings of loneliness. Moreover, there are situational factors such as loneliness and loss over time that effect older adults' well-being (Authors, in press). Empirical research findings have shown significant relationships between loneliness and depression among elderly individuals in the United States (Cohen-Mansfield & Parpura-Gill, 2007; Poulin, Deng, Ingersoll, Witt & Swain, 2012) and in China (Poulin et al., 2012). Loneliness has also been shown to be associated with poor health (Cohen-Mansfield & Parpura-Gill, 2007). Moreover, another study of older adults revealed that loneliness was significantly related to anxiety (Baro, Huss-Ashmore, Wittink, Murray, Bogner, & Gallo, 2006) which in turn affects well-being. The inverse association among loneliness and depression with well-being in older adults have been well studied in Ireland, Finland, and India (Golden, Conroy, Bruce, Denihan, Greene, Kirby, & Lawlor, 2009; Routaslo,

Tilvis, Kautiainen, & Pitkala, 2008; Sing & Mica, 2009). Downs and Javidi (1990) found that a significant relationship exists between feelings of loneliness, self-control, inclusion, and affection in older adults. The ill effects on subjective well-being that arise from loneliness can be countered in part by means of pet attachment and social support.

Pet Attachment

Sable's (1995) conceptualization of pet attachment supports Weiss's (1974) social provisions of relationships as pets can provide opportunities for attachment and nurturance of others and more broadly offer extended social networks and social interactions. Pets enhance elderly individuals' well-being by providing both intrinsic and extrinsic rewards. Among the intrinsic rewards include the provision of emotional support that provide feelings of being needed and valued (Pachana, 2007), which in turn can reduce or eliminate feelings of depression (Duvall Antonacopoulos, & Pychyl, 2010), and enhance feelings of relaxation (McNicholas, Gilbey, Rennie, Ahmedzai, Dono, & Ormerod, 2005). The companionship of a pet provides both the opportunity for nurturance as the pet needs the assistance of their master, and a sense of reliable alliance since the pet can count on their master for assistance (Author, 2012).

Among the extrinsic rewards include social interaction with other pet owners or in elderly groups that introduce pets to the group. Walking outside with one's pet often provides the opportunity to meet other pet owners who are walking their pet that results in social interaction (McNicholas et al. 2005), as well as physical exercise that in turn leads to better health in general (Knight & Edwards, 2008), and has shown to enhance recovery from acute myocardial infarction (Friedmann & Thomas, 1995). Animal-assisted activities and therapy given in groups of elderly individuals has shown to increase their communication and social interaction between the animals and other individuals within the groups (Prosser, Townsend & Staiger, 2008) that has shown to decrease levels of depression (Souter & Miller, 2007). Additionally, pets can provide elderly with a sense of security and safety through their warning of the presence of some unfamiliar event (Author, 2007). Extrinsic rewards among pet owners such as enhanced social interaction and exercise lead to intrinsic rewards that include enhanced health and emotional well -being as well as decreased depression.

Social Support

Social support was theoretically defined for the purpose of this study as a multidimensional concept consisting of relational provisions including attachment, social integration, opportunity for nurturance, reassurance of worth, reliable alliance, and obtaining guidance (Weiss, 1974). Social support promotes well-being through sharing concerns, ideas, information with others as well as being a recipient of nurturant behavior, reassurance of worth, and assistance with needed services; but absence of these functions may lead to feelings of anxiety and vulnerability (Weiss, 1969). Positive social exchanges and greater availability of social support from a sample of Australian friends and family was demonstrated by middle and older community residents who volunteered their service (Pilkington, Wilndsor, & Crisp, 2012). Individuals who volunteered their services experienced significantly higher levels of subjective well-being compared to non-volunteer individuals. Pilkington et al. also found that availability from friends as opposed to relatives or neighbors was the most consistent mediator between volunteering and subjective well-being. An international study by Poulin, Deng, Ingersoll, Witt, & Swain (2012) revealed that higher levels of family and friend support was associated with significantly lower levels of depression and higher health functioning in both elderly American and Chinese individuals. Researchers have suggested that well-being and health are affected by the magnitude of social networks in a sample of older adults from Delhi (Singh & Misra, 2009). Downs and Javidi (1990) found that a significant relationship exists between feelings of loneliness, self-control, inclusion, and affection in older adults. In a recent study conducted with HIV+ adults the results supported that those with higher levels of social support reported higher levels of vitality (Nguyen, Chng, Vosvick, & Perales, 2010). Empirical research regarding the presence of social support provides evidence for enhancement of elderly individual's subjective well-being.

Purpose

Clinicians have utilized aspects of well-being to assess the effects of chronic illness on human health outcomes and evaluate treatment modalities in practice (U.S. Department of Health and Human Services, 2013). For this reason, identifying the predictors of well-being and its components will have important implications for clinical application, especially for older adults. Nurse researchers have an obligation to investigate positive

and negative predictors that effect well-being in order to effectively identify evidence-based interventions that improve well-being for this aggregate. Therefore, the purpose of this study involving secondary analysis of data (Author, 2007) was to examine seven models consisting of demographic and psychosocial predictors of well-being among older adults.

Research Problem

Loneliness, attachment, and social support affect aspects of well-being in older adults. Therefore, it is important that nurses and other health care providers identify whether positive or negative predictors of well-being are present in order to identify appropriate and effective evidence-based interventions in the clinical setting for this aggregate.

Research Question

How well does the psychosocial measures of loneliness, pet attachment support, and social support predict well-being and well-being components: anxiety, depressed mood, positive well-being, self-control, general health, and vitality, controlling for gender, age, education, subject's health, experienced loneliness due to loss, and pet type?

Method

The study employed a non-experimental quantitative predictive design using the psychosocial measure to forecast the relationships among the dependent variable and its components. According to Polit and Beck (2012) this design is appropriate to examine the predictive nature of the relationships between variables. Therefore, this study design was fitting to answer the research question posed to examine how well psychosocial measures predict well-being and its components.

Sample and Setting

Institutional Review Board (IRB) approval was obtained from Rutgers University prior to data collection. All participants signed an informed consent prior to beginning the study and received a copy of the signed informed consent for their records. The convenience sample was recruited from the East Coast of the United States of America. The participants were recruited from senior housing facilities designed for older adults or who attended a senior citizen community centre. Men and women were eligible to participate if they met the following criteria: 1) resided in the community;

2) owned a canine or a feline; and 3) were able to communicate in English. Based on the power tables to ensure a medium effect size $f^2 = .15$ and .05 level of significance, a minimum number of 75 participants were needed to achieve a power of .82.

Instruments

A demographic questionnaire ascertained information on gender, age, race, educational history, marital status, experienced loneliness due to loss, pet type, and health status. Participants rated their health on a rating scale using anchors ranging from 1 (poor) to 5 (excellent) with a high score indicating better perceived health.

Well-being was measured by the Psychological General Well-Being Schedule (PGWB) (Dupuy, 1984). The PGWB Schedule is a 22-item summative Likert-type rating scale using anchors ranging from 0 (most negative option) to 5 (most positive option). The PGWB Schedule has six subscales: anxiety (5 items), depressed mood (3 items), positive well-being (4 items), self-control (3 items), health (3 items), and vitality (4 items). Scores can range from 0-110 for the total PGWB scale and between 0 and 15, 0 and 20, 0 and 25 depending on the subscale with higher scores indicating a higher degree of well-being. Subscale items for anxiety and depressed mood were reversed scored indicating that higher subscale scores indicated lower anxiety and depressed mood.

The psychometric evidence for the PGWB has been reported in a sample of the population consisting of 1,209 residents of Dayton, Ohio (= .94; Ware, Johnson, Davies, & Brook, 1979). Ware and colleagues (1979) examined this relationship between the scores on the PGWB and the theoretically relevant variables of mental health, social emotional support, and an assessment of one's life satisfaction thereby establishing concurrent validity.

The Cronbach's alpha reliability in the current study was .84. Cronbach's alphas for each subscale indicated internal consistency for subscales: anxiety (= .87), positive well-being (= .72), health (= .70), and vitality (= .78). Cronbach's alphas for depressed mood and self-control were = .69 and = .55, respectively.

Loneliness (total) was measured by the Revised UCLA Loneliness Scale (Russell et al., 1980). The

instrument is a 20-item summative Likert-type rating scale that uses anchors ranging from 1 (never) to 4 (often). Total scores can range from 20 to 80 with higher scores indicating a higher degree of loneliness. Concurrent and discriminant validity was appraised by examining the relationship between the scores on the Revised UCLA Loneliness Scale and the theoretically relevant variables of social activities and relationships; and scores on other measures of mood and personality, respectively (Russell et al., 1980). Construct validity was established by Russell (1982) by examining feelings theoretically related to loneliness such as being abandoned, depressed and hopeless; and feelings unrelated to loneliness, such as surprised and thoughtful. The psychometric evidence for the Revised UCLA Loneliness Scale has been reported by the scale developers (= .94; Russell et al., 1980). The Cronbach's alpha obtained in this study was .84.

Pet attachment support (PAS) was measured by the Pet Attachment Scale (Albert & Bulcroft, 1988). The instrument is a 9-item summative Likert rating scale that uses anchors ranging from 1 (strongly disagree) to 5 (strongly agree). Total scores can range from 9 to 45, with higher scores indicating a higher degree of pet attachment. To avoid overlapping content with the loneliness scale, the word sad was substituted for lonely in question number six by permission (K. Bulcroft, personal communication, March, 13, 2006). Construct validity was established by the scale developers via multiple classification analysis that indicated pet attachment support, measured by the PAS, was found to be higher among never-married, divorced, widowed people and people who did not have children in the home (Albert & Bulcroft, 1988). The psychometric evidence for the PAS was reported by scale developer (= .85; Albert & Bulcroft, 1988). The Cronbach's alpha in this study was .89.

Social support was measured by the Coping Strategy Indicator (CSI): Seeking Support subscale (Amirkhan, 1990). The Seeking Support subscale is an 11-item summative Likert-type scale that uses anchors ranging from 1 (not at all) to 3 (a lot). Total scores can range from 11 to 33 with higher scores indicating a greater use of seeking social support. Construct validity was established by correlating the CSI scale scores with scores from other instruments measuring coping and validation indices. Discriminant validity was established by testing for independence from the Crowne-Marlow Social Desirability scale (Crowne & Marlowe, 1964). The psychometric evidence for the Seeking Sup-

port subscale was reported by scale developer (= .93; Amirkhan, 1990). The Cronbach's alpha in this study was .90.

Procedure for Data Analysis

Data were screened for normality, linearity, and homoscedasticity. Examination of residual scatterplots which provide a test of assumptions of normality, linearity, and homoscedasticity between predicted dependent variable scores and errors of prediction, for each of the seven models indicated the residuals were distributed in a rectangular form with a concentration of values along a straight line in the centre of the plot indicating the assumptions for normality, linearity, and homoscedasticity of residuals were met (Tabachnick & Fidell, 2007). Furthermore, there is no evidence of multicollinearity as no correlation coefficient within the models exceeded .543.

Data were analyzed using two-tailed tests at the .01 level of significance to control for type 1 error due to multiple model testing. Descriptive statistics, scale/subscale reliabilities, Pearson Product Moment correlations, and hierarchical multiple regression analyses were tested using the Statistical Package for Social Sciences (SPSS), version 20.0 for Windows. For the hierarchical regression analysis gender was coded male = 1 and female = 2; education was coded no formal school = 1, some grammar = 2, completed grammar school = 3, some high school = 4, completed high school = 5, some college = 6, and completed college = 7; experienced loneliness due loss of relative, friend, or pet was coded no = 1 and yes = 2; and pet was coded dog = 1 and cat = 2.

Hierarchical multiple regression analysis (Tabachnick & Fidel, 2007) was used to determine demographic and psychosocial predictors of well-being in seven regression models. The seven models varied only by the dependent variable. The dependent variable, well-being was measured by the total PGWB (Dupuy, 1984) and subsequently by each of the PGWB sub-scales to form the seven regression models. Dependent variables for the seven models were: well-being scale total, and the following subscales: anxiety, depressed mood, positive well-being, self-control, health, and vitality.

Each regression model included the same demographic and psychosocial variables to determine if predictors of well-being varied according to the total or subscales of the PGWB. The models examined the fol-

lowing demographic characteristics in each of the seven models: subjects' gender, age, educational level, health, and experience of loneliness due to loss of a person or companion dog or cat. Psychosocial predictors included measures of loneliness, pet attachment support, and seeking social support.

Results

The participants were recruited from senior housing facilities designed for older adults (n = 24) or who attended a senior citizen community centre (n = 6). Descriptive statistics for the demographic characteristics of study participants were conducted. The sample consisted of 174 women and 35 men whose age ranged from 48 to 93 (M = 71.66; SD 9.14). All of the participants in this study met the inclusion criteria therefore no cases were excluded. Although older adults are defined mostly as 55 and older, the researchers felt that based on surveys and reports described below that the individuals who completed the surveys should be included in the analysis. There was a national survey conducted by AARP who identified among older adults as 45 years and older (Wilson & Moulton, 2010). In addition, the Centre for Disease Control (CDC; n.d.) identified older adults in a report as 45 years and older. Moreover, the mean age in this study was 71.66 years with a standard deviation of 9.14.

A majority of the participants were white (n = 200 [95.7 %]), a very small percentage were black (n = 3 [1.4 %]), and Hispanic/Latino (n = 3 [1.4 %]), one Native American/Alaskan American, and 2 undeclared. Approximately one-half of the participants completed some college course work or graduated from college (n = 95 [45.4 %]) and over one-third of the participants competed high school (n = 70 [33.5 %]), followed by attended some high school (n = 32 [15.3 %]), completed grammar school (n = 6 [2.9 %]), attended some grammar school (n = 4 [1.9 %]), 1 participant had no formal schooling, and 1 undeclared. The majority of the participants were widowed (n = 83 [39.7%]), followed by married (n = 58 [27.8%]), then divorced (n = 46 [22 %]), never married (n = 17 [8.1%]), 2 separated, and 2 partnered.

A majority of the participants lived alone (n = 127 [60.8%]) followed by lived with a spouse or significant other (n = 59 [28.2%]), family/relative (n = 17 [8.1%]), 3 lived with a friend, 2 with a parent(s), and 1 undeclared. Participants revealed their health as good (n = 72 [34.4%]), followed by very good (n = 63 [30.1%]),

excellent (n = 36 [17.2%]), fair, poor (n = 33 [15.8%]), and 1 undeclared. A majority of the participants experienced loneliness due to loss of a person or companion dog or cat (n = 149 [71.3%]) compared to those who did not (n = 60 [28.7%]). Participants either had a companion dog (n = 99 [47.6%]) and/or a companion cat (n = 109 [83.7%]).

The descriptive statistics were run for the total well-being scale, the six subscales, and the loneliness, pet attachment support, and social support scales. The total well-being scale scores ranged from 12-110 (M = 76.74 , SD = 16.16) and for the subscales: anxiety scale scores ranged from 4-25 (M = 17.40, SD = 4.70) (5 items), depressed mood scale scores ranged from 3-15 (M =11.93 , SD = 2.48) (3 items), positive well-being scale scores ranged from 0-20 (M = 12.39, SD = 3.48) (4 items), self-control scale scores ranged from 2-15 (M = 12.01, SD = 2.47) (3 items), health scale scores ranged from 2-15 (M = 9.73, SD = 2.79) (3 items), and vitality scale scores ranged from 0-20 (M = 13.11, SD = 3.58) (4 items). The scale scores for loneliness ranged from 23-60 (M = 37.19, SD = 8.21), pet attachment support ranged from 13-45 (M = 36.41, SD = 6.46), and social support ranged from 11-33 (M = 25.08, SD = 5.15).

Pearson Product Moment correlations for the variables included in the hierarchical multiple regression models are displayed in Table 1.

Hierarchical regression analyses consisted of the following independent variables at Step 1: demographic variables that included the subjects' age, gender, education, health, loneliness due to loss, and kind of pet. At step 2 psychosocial independent variables included: loneliness total, pet attachment, and social support.

Regression analyses began with testing Model 1 with the dependent variable, well-being total score and subsequent models using each of the well-being subscale scores. As shown in Table 3, all analyses of the models using the total and subscale well-being scores as dependent variables were statistically significant. The amount of explained variance via the adjusted R^2 following Step 1 entry of variables ranged between .161 (Model 5, self-control subscale) and .329 (Model 6, health subscale) and following Step 2 with the addition of psychosocial variables the adjusted R2 ranged between .250 (Model 2, anxiety subscale) and .430 (Model 1, well-being scale total) as shown in Table 2. Hierarchical regression analyses were conducted for each

model and are discussed below.

For Model 1, with the dependent variable, total well-being, two statistically significant demographic variables entered at step 1 that included the subject's age and health status. At step 2, in addition to the significant psychosocial variable, loneliness, the same two demographic variables, subject's age and health status, continued to be significant predictors of total well-being.

For Model 2 with the dependent variable, anxiety, two statistically significant demographic variables entered at step 1 that included the subject's age and health status. At step 2, in addition to the significant psychosocial variable, loneliness, the same two demographic variables, subject's age and health status, continued to be significant predictors of anxiety.

For Model 3 with the dependent variable, depressed mood, three statistically significant demographic variables entered at step 1 that included the subject's age, health status, and loneliness due to loss. At step 2, in addition to the significant psychosocial variable, loneliness, two demographic variables, subject's age and health status, continued to be significant predictors of depressed mood.

For Model 4, with the dependent variable, positive well-being, two statistically significant demographic variables entered at step 1 that included the subject's health status, and loneliness due to loss. At step 2, in addition to the significant psychosocial variable, loneliness, the demographic variable, subject's health status, continued to be significant predictors of positive well-being.

For Model 5, with the dependent variable, self-control, two statistically significant demographic variables entered at step 1 that included the subject's age and health status. At step 2, in addition to the significant psychosocial variable, loneliness, the same two demographic variables, subject's age and health status, continued to be significant predictors of self-control.

For Model 6, with the dependent variable, health, three statistically significant demographic variables entered at step 1 that included the subject's education level, health status and type of pet. At step 2, in addition to the significant psychosocial variable, loneliness, the same three demographic variables, subject's education level, health status, and type of pet continued to be significant predictors of health.

For Model 7, with the dependent variable, vitality, two statistically significant demographic variables entered at step 1 that included the subject's age and health status. At step 2, in addition to the significant psychosocial variables, loneliness and pet attachment, the same two demographic variables, subject's age and health status, continued to be significant predictors of vitality. The standardized Beta, t value, and p value for each of the regression models can be found in Table 3. A summary of the statistically significant variables that entered the Regression models at step 2 are shown in Table 4.

Discussion

Internationally, the older adult population is projected to triple by 2050 (WHO, 2011). Moreover, healthy people 2020 identified well-being as a leading health indicator that will be monitored over the next decade (U.S. Department of Health and Human Services, 2013). As pioneers in healthcare, nurses must be knowledgeable on how to assess and communicate actions that address older adult's well-being in clinical settings across the globe. Interventions must be designed and implemented based on the identified positive and/or negative predictors of this multidimensional construct specific for this aggregate of elderly individuals.

There are several predictors of well-being and the subscales: anxiety, depressed mood, positive well-being, self-control, health, and vitality that were identified in the regression models. The findings are consistent with the theory proposed by Weiss (1973; 1974), namely, loneliness has a negative impact on well-being and both social support and attachment enhance well-being.

In regression model 1, the results supported that overall loneliness is highly significant as are age and health in assessing one's total well-being. In model 2, the experience of overall loneliness as measured by the loneliness total scale was significant together with age and health in assessing the effects of anxiety on well-being. In model 3, due to the adjustment of the model variance that occurred in step 2, overall loneliness was highly significant as a predictor of depressed mood together with age and health, but not loneliness due to loss that entered at step 1. In model 4, after adjustment of the model variance that occurred in step 2, overall loneliness was highly significant as a predictor of positive well-being together with health, but not loneliness due to loss that entered at step 1. In model 5, after adjust-

ment of the model variance that occurred in step 2, overall loneliness was a highly significant predictor on self-control together with age and health. In model 6, after adjustment of the model variance that occurred in step 2, overall loneliness was a highly significant predictor of health together with education, health, and kind of pet. In model 7, after adjustment of the model variance that occurred in step 2, overall loneliness and pet attachment were highly significant predictors of vitality together with age and health. As shown in Table 4, the highest predictors of well-being pertaining to demographic variables were older age and better health and the greatest psychosocial predictor was loneliness.

Well-being is a process and more than the absence of anxiety and depression (Duckworth, Steen, & Seligman, 2005). Moreover, loneliness is a known antecedent that can impair heath. According to Hawley and Cacioppo (2010) loneliness is not merely a sense of aloneness. Recent research supported that loneliness in older persons is a significant predictor of functional decline and risk of death (Perissinotto, Cenzer, & Covinsky, 2012). Unfortunately loneliness may be a common feeling among older adults that diminishes positive well-being. Researchers suggested that for older adults experiencing loneliness and impaired well-being client-centreed psychosocial group intervention should be explored (Routasalo, Tilvis, Kautiainen, & Pitkala, 2008). Nurses can facilitate and organize client-centreed psychosocial group interventions for lonely older adults with impaired well-being in the clinical setting.

Gender was examined as a potential predictor of well-being in this study. Past research findings supported an absence of mean differences between males and females on well-being (Cummings, 2002; Levkoff, Cleary, & Wetle, 1987; Myers & Diener, 1995). In this study gender failed to be predictors in any of the seven regression models supporting the findings from past research. As shown in Table 2, gender showed moderate negative correlations with the well-being total scale and subscales indicating that elderly men perceived a higher level of well-being than elderly women. Although gender failed to be a significant predictor of well-being in the regression models, this finding should be interpreted with caution since the sample size for men was 20 percent.

Negative Betas between subject's educational level, experience loneliness due to loss, kind of pet, and overall loneliness with the dependent variable suggest higher levels of well-being. Positive Betas between sub-

ject's age and dog companions rather than cat companions suggest higher levels of well-being as shown in Table 3. This result supported recent research conducted by Author (2012) on the benefit of pet companionship for older adults to enhance well-being. Nurses and healthcare professionals can use the results of this study to advocate for companion dogs for older adults to enhance their well-being. In addition, several studies have supported pets as a form of social support and a coping resource for older adults (Author, 2012; Author, 2008). In addition, the results of this study support the positive effects of health on well-being. However, social support had low correlations with all other study variables as shown in Table 1. The latter shortcoming probably influenced why seeking social support failed to be a significant predictor of well-being in all seven regression models. The seeking social support scale items may not have been relevant to this sample of older adults in light of where they were recruited (e.g. senior housing facility or senior citizen centre). It is possible that adults who participated in this study had adequate support and available social support networks; perhaps in part due to owning a personal/companion pet which is consistent with current literature (Walsh, 2009). Given that personal pets are always available they can provide that needed sense of sociability for their owners. Therefore, it is suggested in light of this finding that nurses discuss the potential benefit of pet ownership and/or the implementation of pet visitation programs at senior housing facilities and at senior citizen centres.

Limitations and Future Research Direction

This study used data from a convenience sample of predominately healthy white females therefore generalizabilty of the results is limited. For that reason, it is suggested that this study be expanded to include other older adult populations. It is also important that future research examine multidimensional scales using factor analysis in order to show how components of a scale explain a particular phenomenon of interest rather than merely looking at the overall effect. It is more informative for nurse researchers to provide the evidence that influences evidence-based practice by looking at the individual effects of a multidimensional construct such as well-being as this will provide nurses with more direction for appropriate referrals, intervention, and/or follow-up.

Conclusion

In summary, predictors of well-being among

older individuals varied according to whether the total or subscale scores of the PGWB scale were used suggesting the multidimensionality of well-being as shown in the scale's subscales. Findings from model testing identified the importance of using the subscales to provide direction to nurses in promoting well-being of older individuals according to whether negative or positive predictors of well-being were present. Based on Healthy People 2020, well-being has been designated as a foundation health measure for the next decade (U.S. Department of Health and Human Services, 2013). The results of this study provide international nurses with the knowledge needed to identify positive and negative predictors and identify appropriate interventions to enhance well-being in this aggregate.

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Table I. Pearson Product Moment Correlations among Predicted and Dependent WB Variable

Number, Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 WB Total Scale															
2 Anxiety Subscale	.872**														
3 Depressed Mood Subscale	.813**	.767**													
4 Positive WB Subscale	.824**	.619**	.650**												
5 Self-Control Subscale	.708**	.581**	.573**	.517**											
6 Health Subscale	.733**	.559**	.486**	.532**	.371**										
7 Vitality Subscale	.857**	.658**	.583**	.720**	.557**	.669**									
8 Subject's Gender	-.471**	-.306**	-.431**	-.513**	-.382**	-.285**	-.396**								
9 Subject's Age	-.026	-.002	-.121	.027	-.065	-.079	.089	.108							
10 Subject's Education	.018	-.090	-.036	.167*	-.049	.022	.078	-.385**	.186**						
11 Subject's Health	-.044*	-.086	-.096	-.019	-.087	.034	.021	-.009	.064	.184**					
12 loneliness due to loss	.194**	.224**	.185**	.033	.210**	.078	.188**	-.012	-.024	-.301**	.134				
13 Kind of Pet (Dog, Cat)	-.008	-.083	.071	-.006	.084	-.061	-.009	-.091	-.142*	.068	-.037	-.132			
14 Loneliness Scale Score	-.481**	-.326**	-.302**	-.425**	-.318**	-.543**	-.497**	.232**	.094	-.005	-.048	-.019	-.195**		
15 Pet Attachment Scale Score	-.223**	-.194**	-.254**	-.251**	-.071	-.172*	-.173*	.170*	.179**	.065	-.001	.006	-.011	.177*	
16 Seeking Support Scale Score	-.157*	-.154*	-.146*	-.063	-.114	-.191*	-.157*	.091	.052	.002	.112	.107	-.096	.088	.052

*P < .05, **P < .01

Table 2. Incremental Regression Model Demonstrating Predictors of General Well-being among the Elderly

Scale/Subscale	Step	R	R^2	Adjusted R^2	R^2 Change	F Change	Degrees of Freedom	Significance of F Change
Model 1 General Well-Being: Total Scale	1	.561	.315	.295	.315	15.348	200	.000
	2	.675	.455	.430	.140	16.829	197	.000
Model 2 Anxiety Subscale	1	.464	.216	.192	.216	9.161	200	.000
	2	.532	.283	.250	.067	6.149	179	.000
Model 3 Depressed Mood Subscale	1	.451	.203	.179	.203	8.486	200	.000
	2	.585	.342	.312	.139	13.845	197	.000
Model 4 Positive Well-Being: Subscale	1	.471	.222	.199	.222	9.519	200	.000
	2	.638	.407	.380	.185	20.526	197	.000
Model 5 Self-Control Subscale	1	.431	.186	.161	.186	7.593	200	.000
	2	.537	.289	.256	.103	9.537	197	.000
Model 6 General Health Subscale	1	.590	.348	.329	.348	17.816	200	.000
	2	.615	.378	.350	.030	3.156	197	.026
Model 7 Vitality Subscale	1	.556	.309	.288	.309	14.906	200	.000
	2	.646	.417	.390	.108	12.128	197	.000

Table 3. Standardized Beta Coefficients and their significance for Predicted and Dependent General Well-being Variables

Step / Var.	Regression Model 1 General Well-being Total Scale			Regression Model 2 Anxiety: Subscale			Regression Model 3 Depressed Mood Subscale			Regression Model 4 Positive Well-being Subscale			Regression Model 5 Self-Control Subscale			Regression Model 6 General Health Subscale			Regression Model 7 Vitality: Subscale		
	Std.	t	p	Std.	t	p	Std.	t	P	Std.	t	p	Std.	t	p	Std.	t	p	Std.	t	p
Step 1																					
Sex	-.078	-1.307	.19	-.121	-1.902	.06	-.119	-1.854	.07	-.038	-0.607	.55	-.117	-1.799	.07	.017	0.290	.72	-.012	-0.195	.85
Age	.215	3.598	.00	.234	3.660	.00	.235	3.640	.00	.040	0.621	.54	.255	3.901	.00	.076	1.302	.19	.197	3.271	.00
Ed.	-.072	-1.183	.24	-.125	-1.927	.06	.056	0.861	.39	-.073	-1.333	.30	.050	0.764	.45	-.156	-2.642	.01	-.078	-1.283	.20
Health	.460	7.574	.00	.313	4.813	.00	.247	3.775	.00	.409	6.315	.00	.308	4.650	.00	-.544	-9.175	.00	.483	7.507	.00
Lonely Loss	-.135	-2.80	.02	-.129	-2.030	.04	-.202	-3.150	.00	-.180	-2.842	.01	-.022	-0.342	.73	-.065	-1.125	.26	-.079	-1.330	.19
Pet Type	-.133	-2.237	.03	-.142	-2.228	.03	-.122	-1.893	.06	-.028	-0.447	.66	-.104	-1.801	.11	-.165	-2.841	.01	-.139	-2.315	.02
Step 2																					
Sex	-.062	-1.125	.26	-.096	-1.509	.13	-.088	-1.440	.15	-.048	-0.829	.41	-.089	-1.409	.16	.026	0.439	.66	-.021	-0.367	.71
Age	.174	2.999	.00	.184	2.768	.01	.174	2.724	.01	.031	0.514	.61	.199	3.006	.00	.056	0.911	.36	.192	3.197	.00
Ed.	-.076	-1.393	.17	-.121	-1.928	.06	.042	0.691	.49	-.078	-1.362	.18	.045	0.711	.48	-.167	-2.848	.01	-.070	-1.229	.22
Health	.379	6.758	.00	.257	3.996	.00	.160	2.606	.01	.325	5.567	.00	.234	3.663	.00	-.504	-8.431	.00	.428	7.379	.00
Lonely Loss	-.081	-1.471	.14	-.091	-1.436	.15	-.127	-2.094	.04	-.137	-2.381	.02	.036	0.557	.58	-.029	-0.496	.62	-.064	-1.128	.26
Pet Type	-.103	-1.922	.06	-.121	-1.961	.05	-.088	-1.483	.14	.001	0.005	1.00	-.076	-1.233	.22	-.150	-2.605	.01	-.121	-2.176	.03
Loneliness	-.425	-6.812	.00	-.302	-4.223	.00	-.431	-6.292	.00	-.443	-6.806	.00	-.378	-5.307	.00	-.187	-2.813	.01	-.314	-4.866	.00
Pet Attach	.076	1.363	.18	.084	1.317	.19	.013	-0.211	.83	.114	1.957	.05	.039	0.609	.54	-.035	-0.591	.56	.169	2.934	.00
Seek. Supp.	-.101	-1.543	.12	-.142	-1.893	.06	-.145	-2.017	.05	-.005	0.161	.87	-.142	-1.898	.06	-.035	-0.506	.61	-.017	-0.247	.81

Note: Sex (1=Male, 2=Female), Ed. (Education), Lonely Loss (Loneliness due to loss of someone), Pet Type (1=Dog, 2=Cat), Loneliness (Scale Score), Pet Attach (Pet Attachment Scale Score), Seek. Sup. (Seeking Support).

Table 4. Summary of Significant Indicators of GWB Total Scale and Subscales at Step 2

Regression Model	Demographic Variables					Psychosocial Variables		
	Older Age	Higher Education	Better Health	Loneliness From Loss Experience	Kind of Pet	Loneliness	Pet Attachment	Seeking Support
1. GWB total	X		X			X		
2. Anxiety	X		X			X		
3. Depressed Mood	X		X			X		
4. Positive Well-being			X			X		
5. Self-control	X		X			X		
6. General Health		X	X		X	X		
7. Vitality	X		X			X	X	