**Abstract:** From 1990 to 2050, the population aged 60 years and older will rise from 9% to 21%. Healthy aging initiatives are vital to promote individual, community, and global well-being during this transformation. Accurate health measurement tools are needed to successfully guide strategies and plot progress. The validated multi-dimensional Salutogenic Wellness Promotion Scale (SWPS) has documented that increased engagement in measured health promoting behaviors relates to improved health, higher life satisfaction, and fewer problems among adult populations. To extend these findings to the growing older adult population, six groups (*N*=218) pilot tested an older adult version of the SWPS(-Sr) with a perceived health assessment, satisfaction with life survey (SWLS), and a depression scale (CES-D). Data produced a Cronbach’s alpha of 0.933, significant positive correlations between the SWPS-Sr and health (*r*=0.955, *n*=218, *p*<0.000) and with life satisfaction (*r*=0.715, *n*=218, *p*<0.000), and a significant negative correlation between SWPS-Sr and depression (*r*=-0.867, *n*=218, *p*<0.000). Findings suggest the SWPS-Sr provides health professionals with a psychometrically sound tool to assess, evaluate and promote seniors’ health.

**Title:** The Salutogenic Wellness Promotion Scale for Seniors (SWPS-Sr): A Pilot Test to Measure Health Promoting Behaviors and Health Status in Older Adults

**Submission Date:** November 6, 2014

**Key Terms:** Salutogenic, Health, Measurement, Seniors, assessment, promotion

**Author 1 & Correspondant:** Craig M. Becker, PhD; East Carolina University; Department of Health Education & Promotion; 3207 Carol Belk Building; Greenville, NC 27858-4353

Associate Professor; [beckerc@ecu.edu](mailto:beckerc@ecu.edu); 252-328-5312

**Author 2:** Elizabeth Chaney, PhD; East Carolina University; Department of Health Education & Promotion; 3105 Carol Belk Building; Greenville, NC 27858-4353

Assistant Professor; [chaneye@ecu.edu](mailto:chaneye@ecu.edu)

**Author 3:** Kindal Shores, PhD; East Carolina University; Department of Recreation & Leisure Studies; 2404 Carol Belk Building; Greenville, NC 27858-4353

Associate Professor; [shoresk@ecu.edu](mailto:shoresk@ecu.edu)

**Author 4:** Mary Glascoff, PhD; East Carolina University; Department of Health Education & Promotion; 3105 Carol Belk Building; Greenville, NC 27858-4353

Assistant Professor; [glascoffm@ecu.edu](mailto:glascoffm@ecu.edu)

Title: The Salutogenic Wellness Promotion Scale for Seniors (SWPS-Sr): A Pilot Test to Measure Health Promoting Behaviors and Health Status in Older Adults

Abstract

From 1990 to 2050, the population aged 60 years and older will rise from 9% to 21%. Healthy aging initiatives are vital to promote individual, community, and global well-being during this transformation. Accurate health measurement tools are needed to successfully guide strategies and plot progress. The validated multi-dimensional Salutogenic Wellness Promotion Scale (SWPS) has documented that increased engagement in measured health promoting behaviors relates to improved health, higher life satisfaction, and fewer problems among adult populations. To extend these findings to the growing older adult population, six groups (*N*=218) pilot tested an older adult version of the SWPS(-Sr) with a perceived health assessment, satisfaction with life survey (SWLS), and a depression scale (CES-D). Data produced a Cronbach’s alpha of 0.933, significant positive correlations between the SWPS-Sr and health (*r*=0.955, *n*=218, *p*<0.000) and with life satisfaction (*r*=0.715, *n*=218, *p*<0.000), and a significant negative correlation between SWPS-Sr and depression (*r*=-0.867, *n*=218, *p*<0.000). Findings suggest the SWPS-Sr provides health professionals with a psychometrically sound tool to assess, evaluate and promote seniors’ health.

Key Terms: Salutogenic, Health, Measurement, Seniors, assessment, promotion

“Ageing in itself is not a disease or disability. Elderly individuals can remain healthy and active. Healthy ageing should be the main objective of all age care programmes. Active aging should be aimed at by optimizing opportunities for health, participation and security in order to enhance quality of life as people age (Lalitha, p. 2).”

Introduction

The global aging population of people 60 years or older is projected to increase from 9.2 percent in 1990 to over 21 percent by 2050. According to the World Health Organization (WHO), the increased life expectancy and declining fertility rates worldwide represent a public health success story. However, while the benefits are apparent, there are also societal challenges related to economic and community support concerns of keeping older adults healthy (WHO, 2014). For example the need for long-term care of aging adults is rising; it is projected that the number of individuals who can no longer care for themselves will quadruple by 2015 (WHO, 2014). Additionally, the increasing demands on global health care systems are apparent, with comorbidity diagnoses of older adults rising to more than 50% of older people in the US alone (WHO, 2007). Even in poorer countries, the main health concerns for older people have shifted from infectious to non-communicable, chronic diseases (WHO, 2014). Providing adequate care for the older populations is critical and has become a relevant specific health challenge for 21st century health care professionals (United Nations, 2013).

Healthy aging is imperative for us to benefit, let alone maintain status quo during this global transformation. Health promoting behaviors, such as eating well, being physically active, and limiting exposure to certain health risks, can maximize the societal benefits and improve economic burdens associated with the aging of the world’s population. To meet these needs, associated health professionals and health care organizations have invested in developing, implementing, and evaluating interventions that promote the health of older adults (Strout & Howard, 2014). Moreover, to improve understanding of how to promote healthy behaviors of this population, measurement tools that accurately measure health-promoting behaviors of older adults are needed. To meet this growing need, this study assessed health promoting behaviors by building on existing research with a pilot test of an older adult version of the multi-dimensional Salutogenic Wellness Promotion Scale (SWPS). Validation studies using young adult and adult versions of this scale have been published previously (Becker, Whetstone, Glascoff, & Moore, 2008; Becker et al., 2009).   
*Theoretical Foundation:* Health is a broad concept that is defined in the WHO’s constitution (1948) as the presence of physical, mental and social well-being, and not merely the absence of disease and infirmity. It follows then, that to determine health status, assessments should account for the presence of factors related to the creation of physical, mental and social well-being, and not just for the absence of disease, infirmity, and/or risk factors (Becker, Glascoff, Mitchell, Durham, & Arnold, 2007). Further, to promote health, this suggests it would be useful to know what factors enhance, improve, and/or create higher levels of health. Despite this logic, traditional health measurements have assessed health by looking for signs, symptoms, risk factors, and problems associated with disease and infirmity (Adams, Bezner, & Steinhardt, 1997; Benyamini, Idler, Leventhal, & Leventhal, 2000; Glover, 2004; Kahneman, 2011).

Using a traditional method to assess for problems teaches and is akin to telling people what not to do, instead of what to do to achieve health. Avoidance methods therefore result because professionals have to rely on findings related to the absence of negative indicators (i.e. risk factors and health problems), instead of the presence of positive health factors (Adams, Benzer, Garner, & Woodruff, 1998; Antonovsky, 1996; Becker et al., 2009; Keyes, 2005). Results suggest these findings may be less discriminating and sometimes misleading (Becker et al., 2007). Traditional health assessments use these measures because pathogenesis, a method to discover causes or origins of disease, is the guiding framework is pathogenesis (Fineberg, 2013).  
 Problems, such as sensitivity of results and the inability of traditional assessments to explain variance has been associated with measuring the absence of negative states (Becker et al., 2007). With regard to positive and negative states, positive states would be those categorized as desired states to be present like the physical, mental and social well-being, and negative states would be those states one wishes to have absent, such as disease and infirmity as in WHO’s health definition. In addition, the idea that the absence of negative states indicates the presence of positives states is problematic because positive and negative states are independent. The independence of positive and negative states has been recognized by researchers in psychology, education, and health and this work has clarified some of these deficiencies (Antonovsky, 1996; Bradburn & Noll, 1969; Keyes, 2005). These findings indicate the need for separate positive and negative measures, because the act of lowering a positive or negative state does not equate to an equal and opposite adjustment to the other (Bradburn & Noll, 1969; Keyes, 2005). Findings from independent positive and negative states provides additional information that health professionals use for interventions and policy design and appraisal (Dolan, Layard, & Metcalfe, 2011).  
 Recognition for the need for positive health measures was expressed some time ago by the public health pioneer Lester Breslow (1972). He discussed the need for a positive method to measure health that quantified the presence of physical, mental, and social well-being. The idea of identifying and measuring positive attributes has been recognized in multiple fields. For example, the recent developments from the field of positive psychology, as proposed by Maslow (1954), stemmed from the efforts to discover what makes life worth living, rather than psychology’s traditional focus on deficits, disabilities, dysfunction, dissatisfaction, and death. The area of positive psychology, now a burgeoning field, has current researchers such as Seligman (2000), Csiksmilahlyi (2001), and others working to refine and develop these concepts further (see Achor, 2011; Keyes, Fredrickson, & Park, 2012; Pavot & Diener, 2008; Seligman, Steen, Park, & Peterson, 2005). Moreover, Fredrickson’s (2005, 2009) related work provides important implications with her positivity ratio that indicates that it requires a ratio of three positive events/factors to one negative event/factor to enable flourishing (Fredrickson, 2009). This research stream signifies a shift in focus from deficits or negative characteristics toward a focus on strengths or positive characteristics. Adopting these methods for health requires a shift in focus from problems and deficits toward strengths and assets.

To give shape and form to positive, health-promoting assessments, it is necessary to have a model or theory upon which to base these assessments. An alternative or complementary perspective to pathogenesis is offered by salutogenesis. Salutogenesis is the study of factors that support or create health, and therefore, provides an alternate basis for assessment. Salutogenesis, developed by Aaron Antonovsky (1979), identifies factors related to the creation and or improvement of health. To use salutogenesis as a guide for measurement and assessment of health, measures need to assess for factors that create physical, mental and social well-being. Both pathogenic and salutogenic measurement techniques provide information; however, to date, salutogenic or positive measures of health have been scarce. Salutogenic and pathogenic information are complementary. Using both types of measures provides more information to health professionals investigating health status than only doing one type of assessment (Antonovsky, 1996; Becker, Glascoff, & Felts, 2010; Fineberg, 2013).

Although uncommon, a few positive measurement tools have been developed. Some of these measurement tools include the unidimensional Perceived Wellness Scale (PWS) (Adams et al., 1998), the medically attuned multidimensional Health Promoting Lifestyle Profile (HPLP) (Walker, Sechrist, & Pender, 1987) and the Salutogenic Wellness Promotion Scale (SWPS) (Becker et. al., 2008). Validated Salutogenic Wellness Promotion Scales (SWPS) identify factors and actions in multiple areas that are associated with high levels of health. The multi-dimensional SWPS measures engagement in health promoting actions in the physical, social, spiritual, intellectual, vocational, environmental, and emotional areas of life. Validated young adult (YA) (Becker et al., 2009), adult (A) (Becker et al., 2008) and Arabic language (Arab) versions (Al Hadid, Lourance Razzaq Enad et al., 2013) have documented that the more participants report engagement in positive health behaviors in multiple areas of life, the higher their health and life satisfaction and the lower their incidence of problems.

Findings using the SWPS-YA indicated that those young adults who engaged in more measured health promoting behaviors had higher perceived health, life satisfaction, and Grade Point Average (GPA) - meaning they performed better at school. It was also observed that students who engaged in more health promoting actions also experienced fewer problems with anxiety and in their relationships (Becker, Cooper, Atkins, & Martin, 2009). Similarly, the adult SWPS (SWPS-A) studies found that workers who engaged in more measured health promoting behaviors had higher productivity, better health, and higher life satisfaction. These workers also had lower levels of depression and depressive symptoms, factors that often related to absenteeism or lower productivity (Becker, Whetstone et al., 2008). Similar findings have also been documented with young adult Middle Eastern Muslim populations (Al Hadid, Lourance Razzaq Enad et al., 2013). These SWPS studies uniquely demonstrate the cumulative positive benefits beyond disease prevention of health promoting actions across multiple dimensions. However, to date, no similar tool exists for the growing older adult population.

The increased life expectancy of older adults is often accompanied by declines in cognitive and physical abilities, loneliness, isolation, depression, poor nutrition, and financial woes (Fiske, Wetherell, & Gatz, 2009). Moreover, the US Federal Interagency Forum on Aging-Related Statistics (2012) indicate that older age often results in increased risk of a variety of chronic diseases and disorders (Federal Interagency Forum on Aging-Related Statistics, 2012). While pathogenic based assessments may offer a possible association to lower health status (Centers for Disease Control and Prevention, 2013), they do not examine or provide any information about the relationship of health promoting activities to well-being and quality of life beyond the absence of disease and infirmity. Therefore, the purpose of this study was to pilot test an older adult (senior) version (SWPS-Sr) of the previously validated SWPS (Becker et al., 2009) to determine the relationship of engagement in health-promoting behaviors to the health status of older adults.

METHODS

Data Collection

In the southeastern region of the United States, a convenience sample of cross-sectional survey data were collected from five participating senior-serving agencies during a two-month period in Spring 2012. Each agency agreed to collaborate with the researchers and to provide access to members and patrons aged 55 and over. The five groups included two senior aging community centers, one Rotary club, a chapter of a not-for-profit environmental group, and a life-long learning and education group. To gather more participants, volunteering seniors recommended additional participants. This snowball sampling technique created a sixth non-affiliated group of respondents.

To begin participant recruitment, one of the study researchers met face to face with a service provider at each of the five participating agencies. The researcher had an existing working relationship with each service provider. An informational handout about the study purposes, as well as any anticipated risks and benefits, to participants were shared with providers. The researcher gained approval to meet with existing groups of seniors at each facility to administer the survey on site at each location. At the two senior centers, adults were invited to complete the questionnaire as they finished a communal meal. At the environmental club and lifetime education clubs, members were invited to complete the questionnaire during a club meeting. At the Rotary Club, the researcher gave a talk to members about senior issues and health before inviting members to complete the survey at the end of their business meeting.

When an adult at each site elected to participate, he or she was given a paper and pencil questionnaire on site. Each questionnaire included a cover letter that described the study purpose, provided contact information for the investigators and institutional review panel at the university, and informed potential participants of their right to refuse to participate or to stop completion at any time. Potential participants were informed that the survey would take approximately 15 minutes to complete, and that they would be asked questions about their health status, health behaviors, and emotions. Participation was voluntary and questionnaire completion indicated consent. Responses were maintained confidentially. The home institution’s research and ethics board approved the study protocol and instrumentation. No incentive was provided for participation to either participants or the cooperating agencies.

When the participant completed the questionnaire, he or she was invited to contact other older adults who were not affiliated with their group and invite their participation in the survey. This snowball sampling technique was used to increase the number of potential respondents for this theoretical, non-representative sample of older adults. Respondents who chose to participate and “nominate” additional participants provided the on-site researcher with their name as well as the name and email contact information of any prospective participants. These nominated participants were contacted via email. The email indicated that their name had been shared (and who shared their contact information) before introducing the study, the survey cover letter and live link to the questionnaire online. Both the electronic and paper and pencil versions were identical. No follow up messages were used and respondents were only invited one time.

Response Rate: In the six face-to-face groups (*n* =143), the response rate was 76% and online data collection (*n* = 75) had a response rate of 52%.

Instrumentation

The questionnaire contained six sections: demographics, the Salutogenic Wellness Promotion Scale - Senior Version (SWPS-Sr), a perceived health assessment, the Center for Epidemiological Studies - Depression (CES-D) Scale, and the Satisfaction with Life Scale (SWLS). These scales were used to determine if the SWPS had validity and was measuring intended content, that is the CES-D measured negative health states and the SWLS measured positive health states. Relationships between these scales were completed to determine validity.

a. Demographics: gender, ethnicity, age, height, weight, work status, own or rent home/condominium/apartment, and if live with spouse/significant other, with children, or if live with both.

b. Senior SWPS: The 25-items measuring the presence of health promoting actions used the adult version items that had been previously shown to be valid in other samples. Based on consultation with gerontology professionals, vocation items were adjusted to reflect the retired status of older adults. To adjust for the older population, vocational areas referred to daily activities rather than work activities as enjoyable, satisfying, inspiring and important. For instance, instead of responding to how often, “What I do at work is important.” The senior’s version asks how often, “My daily activities are important.”

Content was further documented with supportive research. Items queried engagement in documented health promoting actions for seniors in the physical (Chodzko-Zajko et al., 2009; Chodzko-Zajko, Proctor, & Fiatarone Singh, 2009), social (Phongsavan et al., 2013), emotional (Brett et al., 2012), spiritual (Ahn, Phillips, Smith, & Ory, 2011), intellectual (Anand, Chapman, Rackley, & Zientz, 2011), vocational (Raphael, Brown, Renwick, & Rootman, 2010), and environmental (Campbell & Campbell, 2005) areas of life. To complete the scale, participants used a Likert scale: 5 (always), 4 (often), 3(sometimes), 2 (once in a while), and 1 (never) to indicate how often they engaged in the listed health behavior or cognition.

c. Global Perceived Health Assessment: After reading the WHO’s definition of health, participants ranked their health on a 5 point Likert scale (Excellent, Very Good, Good, Fair, Poor).

d. CES-Depression Survey: A validated 20-item self-report of depressive symptoms. Previous studies document its validity and reliability (α=.85) (Hann, Winter, & Jacobsen, 1999)

e. Satisfaction With Life Survey (SWLS): A five-item cognitive-judgmental assessment of life satisfaction that does not invoke socially desirable responses (α=.87) with demonstrated validity and reliability in multiple samples (Pavot & Diener, 2008).

Analysis

Population: To determine if populations who used different testing formats could be combined as one group, similarities of the responding Face-to-Face (n=143) and Electronic (n=75) groups were completed. One-way ANOVA of perceived health and chi square of ages were performed.

Reliability: To determine internal consistency of the Likert – type interval scales, the recommended Chronbach’s alphas were calculated for both the total SWPS-Sr scale and the 7 dimensions of life identified in previous research (Becker et al. 2008).

Validity: To determine initial validity of the SWPS-Sr, multiple Pearson correlations were calculated. Convergent validity with perceived health, the SWLS and SWPS and divergent validity between CES-D and SWPS were calculated. Relationships between SWPS dimensions and other measures collected were also determined.

RESULTS

Sample: The sample consisted of 218 adults, 55 years and older, who completed surveys. The overall response rate was 66%. One hundred and two individuals (46.8%) in the sample were male and 116 respondents (53.2%) were female. Respondents ages ranged from 55-91 years, and the age distribution was as follows: 55-59 (9.2%), 60-75 (59.1%), and 76-91 (31.7%). In the current sample, most respondents were White (n=128) 58.7%. Additionally, 14.7% self-identified as Black/African American (n=32), 10.1% Hispanic/Latino (n=22), 6.4% , Multiracial (n=14), 6.0% Other (n=13) and 4.1%, Asian (n=9). Regarding household living status, 41.7% (n=91) lived alone, 25.7% (n=56) lived with a spouse/significant other, 20.2% (n=44) lived with their children and 12.4% (n=27) lived with spouse/significant other and children. Seventy-five (34.4%) participants rented their home and one hundred forty-three (65.6%) reported owning their home. Twenty-eight participants (12.8%) worked full time, while 20.2% (n=44) work part-time, 6.9% (n=15) were unemployed and 60.1% (n=131) labeled themselves as retired. Thirty-eight (17.4%) participants indicated they had a physical disability.

Population: The ANOVA results of perceived health was non-significant (*F*=1.232; *p* = 2.68) and Chi Square of ages were also non-significant (*p* = 0.409; *df =* 36; *F = 37.296).*

Reliability: Chronbach’s alpha correlations were calculated to determine the internal consistency of the SWPS. (Table 1)

Validity: Statistically significant positive correlations were calculated between the total score of SWPS and Perceived Health (r=0.955, n=218, p=0.000) and to SWLS (r=0.715, n=218, p=0.000). A statistically significant negative correlation was observed between SWPS-Sr. and CES-D (r=-0.867, n=218, p=0.000). Each of the dimensional scores calculated on the SWPS also provided similar statistically significant correlations. (Table 2)

DISCUSSION

The increasing percentage of seniors in the world population increases the need for all to attend to and improve their health status (Strout & Howard, 2014). To improve their quality of life, an improved health status is important. Traditional health improvement techniques have relied on the incomplete information provided from pathogenic, or disease origins assessments. Better health can only be achieved by engaging in actions that enable and create higher levels of physical, mental and social well-being. Assessment tools are an important way to measure success and compare outcomes across populations, across time, and even within select groups. Understanding factors related to higher health status provides health professionals with guidelines as to what to promote and provides information about the type of environment to create so it encourages health promoting actions. Therefore, an assessment tool like the salutogenically based tool tested in this study may prove valuable.

Traditional assessment tools measure signs, symptoms, and diseases as well as risk factors for disease. While this approach may alert a person or a health provider to negative behaviors, recognizing negative states does not necessarily cause or lead to the physical mental and social well-being of health. In contrast, measuring and managing health promoting actions, as prompted with the SWPS, directs attention toward health promoting actions that have been associated higher levels of health and less disease and infirmity – outcomes desired by most. Using health creating or salutogenic assessments for senior populations, this study built on past research that used salutogenic assessments for other populations. Previous studies indicated that higher levels of participation in health behaviors were associated with the attainment of more desirable health and quality of life. Understanding and using this information can help health professionals develop a plan to improve health and quality of life of seniors which research has shown also helps prevent and avoid problems.

This pilot study tested the Salutogenic Wellness Promotion Scale designed for seniors by measuring the frequency of engagement in health promoting actions. The result of this assessment provides valuable information to health professionals about actions that affect health status. This study documented that the more seniors engaged in health promoting behaviors in the physical, social, emotional, spiritual, intellectual, vocational, and environmental areas, the higher their perceived health and the greater their satisfaction with life. These results also indicated that those seniors who engaged in more health promoting actions were also not depressed.

While these results are encouraging, limitations include the recognition that cause cannot be inferred because of the analysis used and because of factors not assessed. Additionally inherent self-report limitations and associated single item perceived health assessment limit findings. Generalizability to retired populations is limited due to the working status of some in this sample. It is recommended future research investigate the scale’s validity and reliability in other senior populations. Specifically confirmatory factor analysis of dimensions and a longitudinal study to investigate the persistence of findings is recommended.

Although limited, these results suggest the SWPS-Sr has acceptable validity and reliability. Significant correlations of the SWPS with health status measures and negative correlations with depression and symptoms replicates findings of other groups (youth, adults, young adult, Arab speakers) that have shown that engagement in more health promoting actions by these participants, the higher their perceived health and life satisfaction and the lower their depression and symptoms. Additionally, the results support past research with its indication that participants experienced a cumulative benefit to their health status by engaging in more health actions in the seven dimensions measured by the SWPS. The results suggest we can experience good health by engaging in more health promoting behaviors in the physical, social, emotional, spiritual, intellectual, vocational, and environmental areas of life. Therefore using the SWPS to assess and evaluate lifestyles may be a beneficial tool for health promotion efforts.

References

Achor, S. (2011). *The happiness advantage: The seven principles of positive psychology that fuel success and performance at work.* Virgin Digital.

Adams, T., Bezner, J., & Steinhardt, M. (1997). The conceptualization and measuremstement of perceived wellness: Integrating balance across and within dimensions. *American Journal of Health Promotion : AJHP., 11*(3), 208-218.

Adams, T., Benzer, J., Garner, L., & Woodruff, S. (1998). Construct validation of the perceived wellness survey. *American Journal of Health Studies, 14*, 212-219.

Ahn, S., Phillips, K. L., Smith, M. L., & Ory, M. G. (2011). Correlates of volunteering among aging texans: The roles of health indicators, spirituality, and social engagement. *Maturitas, 69*(3), 257-262.

Al Hadid, Lourance Razzaq Enad, Becker, C., Hamden-Mansour, A., Al-Shuabi, J. T., Tharwat, H., & Glascoff, N. (2013). Salutogenic wellness promotion scale: Validation of the arabic version. *American Journal of Health Education, 44*(4), 229-234.

Anand, R., Chapman, S. B., Rackley, A., & Zientz, J. (2011). Brain health fitness: Beyond retirement. *Educational Gerontology, 37*(6), 450-465.

Antonovsky, A. (1996). The salutogenic model as a theory to guide health promotion. *Health Promotion International, 11*(1), 11-18.

Becker, C. M., Cooper, N., Atkins, K., & Martin, S. (2009). What helps students thrive? an investigation of student engagement and student performance. *Recreational Sports Journal, 33*, 139-149.

Becker, C. M., Dolbier, C. L., Durham, T., Glascoff, M. A., & Adams, T. B. (2008). Development and preliminary evaluation of the validity and reliability of a positive health scale. *American Journal of Health Education, 39*(1), 34-41.

Becker, C. M., Whetstone, L., Glascoff, M., & Moore, J. (2008). Evaluation of the reliability and validity of an adult version of the salutogenic wellness promotion scale (SWPS). *American Journal of Health Education, 39*(6), 322-328.

Becker, C. M., Moore, J. B., Whetstone, L., Glascoff, M., Chaney, E., Felts, M., & Anderson, L. (2009). Validity evidence for the salutogenic wellness promotion scale (SWPS). *American Journal of Health Behavior, 33*(4), 455-465.

Becker, C., Glascoff, M., & Felts, W. (2010). Salutogenesis 30 years later: Where do we go from here? *International Electronic Journal of Health Education, 13*, 25-32--32.

Becker, C. M., Glascoff, M. A., Mitchell, T., Durham, T. W., & Arnold, W. (2007). Assessing perceived health and associated health-promoting behaviors: An investigation of methods used to assess health status. *Journal of Applied Social Psychology, 37*(2), 227-242.

Benyamini, Y., Idler, E., Leventhal, H., & Leventhal, E. (2000). Positive affect and function as influences on self-assessments of health: Expanding our view beyond illness and disability. *Journals of Gerontology Series B: Psychological Sciences & Social Sciences, 55B*(2), P107-16.

Bradburn, N. M., & Noll, C. E. (1969). *The structure of psychological well-being, by norman M. bradburn with the assistance of C. edward noll*. Chicago: Aldine.

Brett, C. E., Gow, A. J., Corley, J., Pattie, A., Starr, J. M., & Deary, I. J. (2012). Psychosocial factors and health as determinants of quality of life in community-dwelling older adults. *Quality of Life Research, 21*(3), 505-516.

Campbell, T. C., & Campbell, T. M. (2005). *The china study: The most comprehensive study of nutrition ever conducted and the startling implications for diet, weight loss and long-term health*. Dallas, Tex.: BenBella Books.

Centers for Disease Control and Prevention. (2013). The state of aging and health in america 2013. *Atlanta (GA): Centers for Disease Control and Prevention (CDC),*

Chodzko-Zajko, W., Proctor, D., & Fiatarone Singh, M. (2009). Exercise and physical activity for older adults. american college of sports medicine position stand. *Med Sci Sports Exerc, 41*(7), 1510-1530.

Collins, J., & Hansen, M. T. (2011). *Great by choice: Uncertainty, chaos, and luck--why some thrive despite them all* HarperBusiness.

Dolan, P., Layard, R., & Metcalfe, R. (2011). Measuring subjective well-being for public policy.

Fineberg, H. V. (2013). The paradox of disease prevention: Celebrated in principle, resisted in practice. *Jama, 310*(1), 85-90.

Fiske, A., Wetherell, J. L., & Gatz, M. (2009). Depression in older adults. *Annual Review of Clinical Psychology, 5*, 363-389. doi:10.1146/annurev.clinpsy.032408.153621 [doi]

Fredrickson, B. (2009). *Positivity: Top-notch research reveals the 3 to 1 ratio that will change your life* Random House Digital, Inc.

Fredrickson, B. L. (2005). The broaden-and-build theory of positive emotions. In F. A. Huppert, N. Baylis & B. Keverne (Eds.), *The science of well-being.* (pp. 217-238) Oxford University Press.

Glover, E. (2004). A new health education paradigm: Uncommon thoughts about common matters. *American Journal of Health Education, 35*(5), 260-260-271.

Gottman, J. (1994). Why marriages succeed of fail... and how you can make yours last.

Hann, D., Winter, K., & Jacobsen, P. (1999). Measurement of depressive symptoms in cancer patients: Evaluation of the center for epidemiological studies depression scale (CES-D). *Journal of Psychosomatic Research, 46*(5), 437-443.

Keyes, C. (2005). Mental health and/or mental illness? investigating axioms of the complete state model of health. *Journal of Consulting and Clinical Psychology, 73*, 539–548.

Keyes, C. L., Fredrickson, B. L., & Park, N. (2012). Positive psychology and the quality of life. *Handbook of social indicators and quality of life research* (pp. 99-112) Springer.

Lalitha, K. (2012). Health aspects of elderly: A global issue. *.Journal of Krishna Institute of Medical Sciences University, 1*(2), 1-3.

Maslow, A. H. (1954). *Motivation and personality* Harpers.

Pavot, W., & Diener, E. (2008). The satisfaction with life scale and the emerging construct of life satisfaction. *The Journal of Positive Psychology, 3*(2), 137-152.

Phongsavan, P., Grunseit, A. C., Bauman, A., Broom, D., Byles, J., Clarke, J., . . . Nutbeam, D. (2013). Age, gender, social contacts, and psychological distress findings from the 45 and up study. *Journal of Aging and Health, 25*(6), 921-943.

Raphael, D., Brown, I., Renwick, R., & Rootman, I. (2010). Quality of life: What are the implications for health promotion? *Health Promotion and Quality of Life in Canada: Essential Readings,* 30.

Seligman, M. E. P. (2000). Positive psychology. In J. E. Gillham (Ed.), *The science of optimism and hope: Research essays in honor of martin E. P. seligman.* (pp. 415-429) Templeton Foundation Press.

Seligman, M. E. P., & Csikszentmihalyi, M. (2001). 'Positive psychology: An introduction': Reply. *American Psychologist, 56*(1), 89-90.

Seligman, M. E. P., Steen, T. A., Park, N., & Peterson, C. (2005). Positive psychology progress: Empirical validation of interventions. *American Psychologist, 60*(5), 410-421.

Strout, K., & Howard, E. P. (2014). Application of the rasch model to measure five dimensions of wellness in community-dwelling older adults. *Journal of Nursing Measurement, 22*(2), 268-290.

United Nations, Department of Economic and Social Affairs, Population Division (2013). World Population Ageing 2013

Walker, S. N., Sechrist, K. R., & Pender, N. J. (1987). The health-promoting lifestyle profile: Development and psychometric characteristics. *Nursing Research, 36*(2), 76-81.

World Health Organization. (2014). *Ageing*. Available from: <http://www.who.int/topics/ageing/en/>. Accessed September 16, 2014.

World Health Organization. (2007). *Teaching Geriatrics in Medical Education II*. Available from <http://www.who.int/ageing/publications/alc_tegeme_survey.pdf?ua=1>. Accessed September 16, 2014.

Table 1. SWPS Content & Internal Consistency Measures.

| Scale | Items | Content | Cronbach’s Alpha |
| --- | --- | --- | --- |
| SWPS-Sr. | 25 | Summation of engagement in areas of health promoting actions | 0.933 |
| Vocational | 4 | \*\*Engages in enjoyable, satisfying, inspiring and important activities | 0.694 |
| Social | 4 | Shows affection, sustains contact and communications, good interactions | 0.675 |
| Emotional | 4 | Sees opportunities, manages life and stress well | 0.652 |
| Physical | 2 | Engages in physical movement | 0.579 |
| Environmental | 5 | Supports laws, recycles, and eats healthy & sustainably | 0.736 |
| Spiritual | 4 | Higher power belief, develops spirituality, religious activities | 0.645 |
| Intellectual | 2 | Reads thoughtfully, maintains verbal and writing skills | 0.513 |

\*\*Adjustment for older population: Vocational area adjusted by assessing how often they engaged in enjoyable, satisfying, inspiring and important daily activities rather than work activities

Table 2. Correlations of Measures.

\*p < 0.000

| N=218 | Perceived Health | SWLS | CES-D | SWPS-Sr |
| --- | --- | --- | --- | --- |
| SWPS-Sr. | 0.955\* | 0.715\* | -0.867\* | 1.000 |
| Physical | 0.697\* | 0.488\* | -0.633\* | 0.722\* |
| Social | 0.823\* | 0.598\* | -0.752\* | 0.854\* |
| Emotional | 0.853\* | 0.640\* | -0.774\* | 0.880\* |
| Spiritual | 0.834\* | 0.638\* | -0.771\* | 0.872\* |
| Intellectual | 0.703\* | 0.532\* | -0.624\* | 0.734\* |
| Vocational | 0.808\* | 0.613\* | -0.711\* | 0.859\* |
| Environmental | 0.846\* | 0.644\* | -0.780\* | 0.883\* |
| Perceived Health | 1.000 | 0.739\* | -0.904\* | 0.955\* |