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## Participation and Well-Being Among Older Adults Living with Chronic Conditions

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### Abstract

This study explored the unique contribution of participation (daily activities and social roles) in explaining well-being of older adults living with chronic conditions and examined which aspect of participation (accomplishment of participation or satisfaction with participation) was more important in describing their well-being. Two hundred older adults with chronic conditions completed the following assessments: Satisfaction with Life Scale to measure well-being; Assessment of Life Habits to evaluate two aspects of participation: (a) accomplishment of daily activities and social roles and (b) level of satisfaction with participation; Interpersonal Support Evaluation List to assess level of social support and Affect Balance scale to measure level of balance confidence. In addition, participants' level of mobility was assessed using the Timed Up and Go test. Regression analysis was performed. Results indicated that number of chronic conditions, social support and satisfaction with participation had a significant contribution to well-being and altogether explained 31% of its variance whereas accomplishment of participation did not play as significant role in the model. In conclusion, participation has a unique contribution to older adults' well-being where satisfaction with participation rather than the accomplishment of activities is of importance. Additional aspects of participation and level of disability are key factors identified for further inquiry.

### Keywords

Participation; Well-being; Social environment; Chronic conditions; Aging

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# 1 Introduction

The World Health Organization (WHO 2001) recognizes participation as a key indicator of human health and well-being. Moreover, health professionals consider participation and well-being to be important outcomes of their interventions, and are interested in enhancing their clients' participation in desired roles and life situations to promote their overall well-being (AOTA 2002). In this study, participation is perceived to be broadly conceptualized in that it represents various domains (e.g., social roles and physical, recreational, and daily activities) and two dimensions (i.e., accomplishment and satisfaction) (Fougeyrollas et al. 1998). Enhancing participation of older adults with chronic conditions is critical and can be a challenge because these individuals are often at risk for participation restriction which might threaten their well-being. Therefore understanding how participation is associated with well-being is central to working therapeutically and effectively with an elderly population.

## 1.1 Participation and Older Adults

Participation is defined as involvement in life situations (WHO 2001) such as work, school, play, sports, entertainment, learning, civic life and religious practice among others. Developmental theories suggest that participation patterns change across the life span. These changes in participation patterns are most notable among the elderly who are faced with health decline, reduced income, and death (Edward and Christiansen 2005). A decline in diversity of participation is evident with increasing age (Desrosiers et al. 2004b), resulting in less leisure and productive activities, and instead, an increased focus on activities of daily living (Sachs and Josman 2003). Additionally, there is a tendency at this life stage to engage in more passive activities in isolation and at home (Edward and Christiansen 2005; Freysinger et al. 1993; Jarus et al. 2005). The risk for participation restriction becomes more profound when chronic conditions are involved (Desrosiers et al. 2002, 2006). Chronic conditions are long-term adverse health events in a person's life that can limit one's functional performance (Cardol et al. 2002). Not only chronic condition may threaten older adults' level of participation but also their level of well-being (Sprangers et al. 2000). Given that older adults with chronic conditions are at risk for lower participation resulting in lower well-being, the need to examine their participation patterns as well as explore the impact of these patterns on their overall well-being is critical.

In the present study, participation is operationalized through the concept of life habits derived from the Disability Creation Process (DCP) (Fougeyrollas et al. 1998) model. This model specifies the interaction between personal factors (e.g., health condition, physical and mental capacities), environment barriers/facilitators (e.g., social support) and participation reflected by life habits. Life habits are defined as daily activities such as personal care and mobility, and social roles such as interpersonal relationships and leisure. Life habits may be accomplished on a daily basis (e.g. getting into and out of bed, taking a meal) or at various frequencies (e.g. getting around in local stores, planning a budget, taking part in social activities). Two aspects of participation are suggested by the DCP: (1) accomplishment of participation which refers to the extent to which one can perform an activity independently and with lower level of difficulty and (2) satisfaction with participation.

## 1.2 Participation and Well-Being

Well-being, in its cognitive aspect, refers to a person's perception of his or her current overall life situation, and reflects an individual's level of satisfaction with their life as a whole (Diener 2000). Positive associations between participation and quality of life have been reported among older adults living with physical disability (Levasseur et al. 2004a), dementia (Chung 2004) and stroke (Mayo et al. 2002). However, when examining the relation between participation and well-being it is important to consider relevant factors that might influence this association. One factor is the social environment, or more specifically social support. Social support is a resource of social networks (e.g., family members, friends, acquaintances, caregivers and significant others) that enhances one's ability to cope with daily life events (Bishop et al. 2006). Not only social support is found to be related to well-being (Bishop et al. 2006; Diener et al. 1999; Ferreira and Sherman 2007; Law 2002; Levasseur et al. 2004b) and meaning in life (Krause 2007) in later life but it is also linked to participation (Fougeyrollas et al. 1998). Indeed, the DCP model postulates the inextricable link between the environment (e.g., social support) and participation. Another factor that might affect the relationship between participation and well-being is one's health status. Multiple chronic conditions have been found to impede one's well-being (Sprangers et al. 2000) and restrict their participation (Cardol et al. 2002). Additional personal factors such as one's age, physical and mental capacities are proposed by the DCP as participation restrictors/facilitators. There is evidence that balance confidence, which represent one facet of individuals' mental capacity, plays a significant role in explaining participation among older adults with chronic conditions (Anaby et al. 2009; Pang et al. 2007). Similarly, one's physical capacity, represented by mobility for instance, was also found to be associated with participation in this population (Anaby et al. 2009).

Despite their importance, the effect of the social environment (i.e., social support), personal factors such as health status (i.e., number of chronic conditions) and physical and mental capacities have not been examined in the presence of participation (i.e., accomplishment and satisfaction) when investigating well-being in older adults with chronic conditions. This limits our ability to conclude what unique role participation plays in explaining well-being.

Moreover, it is not clear what aspect of participation is the one that matters most to well-being. Is it one's actual performance (i.e., the accomplishment of an activity)? Or perhaps it is the subjective experience derived from the participation (i.e., satisfaction with participation). One study among older adults with disabilities suggests that not only participation itself is associated with well-being but satisfaction with one's performance is seen as an important consideration when attempting to explain well-being (Levasseur et al. 2004a). However this study could not indicate which component of participation is more important to well-being due to the selected method of analysis. Interestingly, Van Campen and Iedema (2007) found that objective participation (i.e., the actual engagement in an activity) did not play a significant role in explaining well-being among people with physical disabilities. They assumed that the subjective aspect of participation (i.e., the satisfaction derived from engaging in an activity) might have greater contribution to one's well-being. Yet this assumption has not been tested empirically particularly in the older adult population with multiple chronic conditions. Examining both elements of participation (i.e., the actual

participation or accomplishment and satisfaction with participation) at the same time using regression analysis would allow us to conclude which element has a greater contribution to well-being.

In order to address limitations in the existing research we address the following objective(s): (1) to examine the unique contribution of participation to well-being in the presence of number of chronic conditions, physical and mental capacities and social support and (2) to indicate which element of participation, the actual participation (i.e., accomplishment) or the satisfaction with participation is more important to well-being.

We hypothesize that: (1) participation would have an independent contribution to the variance explaining well-being and (2) satisfaction with participation rather than accomplishment is more important to well-being.

## 2 Method

### 2.1 Participants

This cross-sectional study included older adults which were recruited using a 'shelf-talker' strategy. Recruitment information was placed on the shelves of 30 community pharmacies throughout the Vancouver region. Pharmacists provided study information to people who came to their counter with multiple prescriptions. Initial screening for eligibility took place over the phone followed by screening for cognitive impairment which took place in the lab. Individuals were included if they: (1) were aged 65 years or older, (2) had two or more chronic diseases (e.g., arthritis, stroke, heart disease) diagnosed by a medical doctor, (3) were living in their own home, (4) were able to walk for a minimum of 10 metres with/without assistive devices, (5) achieved a score  $\geq 24$  on the Folstein's Mini Mental Examination (Tombaugh and McIntyre 1992) and (6) were able to follow three step commands in English. Individuals were excluded if they were unable to communicate with the investigator over the phone and/or had an impairment or health concern that prevented the completion of testing.

### 2.2 Procedure

The present study is part of a bigger study of older adults with chronic conditions that was conducted in May to July 2005. After giving informed consent, participants were invited to the GF Strong Rehabilitation Research Lab (Vancouver, Canada) for data collection. A convenient sample of 200 participants were then randomly placed into one or five test stations where they completed a series of self report measures and several physical assessments. Upon completion of one station the participant rotated to the next station until all five stations were completed. Each station was manned by a trained data collector who introduced the measures to be completed and insured that complete data were collected. The testing protocol took approximately 2 h to complete. All participants received a \$75.00 honorarium for their participation and time. The study was approved by the local ethics and hospital review boards.

### 2.3 Measurements

Participation, conceptualized as life habits, was measured using the Assessment of Life Habits (LIFE-H) version 3.1 (Noreau et al. 2002). This assessment includes 77 life habits covering 6 categories of daily activities (nutrition, fitness, personal care, communication, housing and mobility) and 6 categories of social roles (responsibility, interpersonal relationships, community life, education, employment and recreation). The participant is asked to rate the level of accomplishment of each life habit in terms of: (1) difficulty by using a four point scale ranging from 1 (not accomplished) to 4 (no difficulty) and (2) type of assistance needed using a scale ranging from 1 (human assistance) to 4 (no assistance). The accomplishment scores are converted to a 0–10 scale (normalized score) where 0 indicates total restriction (meaning that the activity or social role is not accomplished) and 10 indicates optimal social participation (meaning the activity is performed without difficulty or assistance). The level of satisfaction with the accomplishment of life habits is evaluated using a five point scale where 1 = ‘very unsatisfied’ and 5 = ‘very satisfied’. A mean of all reported items in each category is calculated to provide a single summary score range from 1 to 5. Summary scores comprised of the means from across the 6 daily activities categories (37 items) and the 6 social role categories (40 items) and across all 77 activities were computed. In summary, accomplishment and satisfaction scores were generated for each of the three life-habits domains: daily activities, social roles and total life-habits, providing us with six distinct scores (variables). The test–retest reliability has been conducted with various samples of people with disabilities (Noreau et al. 2002) and specifically with older adults (Noreau et al. 2004). Intrarater reliability for the total score has been shown to be good (ICC = 0.89; 95% Confidence Interval [CI], 0.80–0.93) (Noreau et al. 2004). Construct validity of the LIFE-H has been established for older adults with functional limitations: the LIFE-H could distinguish between different living environments and the LIFE-H was moderately correlated with a measure of functional autonomy ( $r = 0.70$ ) (Desrosiers et al. 2004a).

### 2.4 Environmental Factor

The Interpersonal Support Evaluation List (ISEL) was used to evaluate the individual’s perception of his or her level of social support (Heitzman and Kaplan 1988). The participant is asked to rate 6 items that account for four dimensions of support (tangible, belonging, self-esteem and appraisal) using a 4-point Likert scale. The generated score is a sum of all the values ranging from 0 to 18 with higher scores indicating greater perceived support. The ISEL has been found to have adequate validity and reliability with internal consistency ranging from 0.77–0.86. The scale was correlated with measures of psychiatric symptoms ( $r = -0.52$  to  $-0.60$ ) (Cohen et al. 1987; Heitzman and Kaplan 1988). In this study Cronbach’s  $\alpha$  coefficient was 0.73.

### 2.5 Personal Factors

Participants’ demographic factors such as age and sex were collected using a demographic questionnaire. Participants were also asked to specify the chronic conditions that they were diagnosed with from a list of 19 chronic conditions derived from the Canadian Community Health Survey.

Participants' physical capacity was assessed by the Times Up and Go (TUG) test. This measure of basic mobility requires subjects to stand from a seated position, walk 3 meters turn around, retrace their path and sit down again. The time in seconds it takes to complete the TUG test is recorded where 15 s or less is a cut-off score indicating a lower risk for falling (Whitney et al. 2005). The TUG has adequate validity among community-dwelling elderly (Lin et al. 2004), with people with various chronic conditions (Hershkovitz and Brill 2006), and excellent reliability among people with chronic stroke (Ng and Chan 2005). The TUG has been reported to be moderately correlated with Tinetti gait ( $r = -0.53$ ) (Lin et al. 2004) and the intra and interrater reliability has been found to be excellent ( $ICC > 0.95$ ) (Ng and Chan 2005).

Participants' mental capacity was measured using The Activities-specific Balance Confidence (ABC) Scale which measures confidence (belief in oneself and in one's perceived ability) in performing 16 specific functional activities without falling. Individuals were asked to rate balance confidence on a numerical rating scale (0–100%) for each activity (0% = no confidence, 100% = complete confidence). The mean of the 16 items is used to represent the overall indication of balance confidence. Evidence supporting the validity and reliability of this self report measure has been reported for the older adult population (Myers et al. 1998; Powell and Myers 1995). Two week test–retest reliability of the scale ( $r = 0.92$ ) and internal consistency (Cronbach's  $\alpha = 0.95$ ) has been reported to be good (Powell and Myers 1995). In this study Cronbach's  $\alpha$  coefficient was 0.95.

## 2.6 Subjective Well-Being

The cognitive aspect of subjective well being was measured using the Satisfaction with Life Scale (SWLS) which includes 5 items rated on a seven point scale. An overall score ranging from 5 (minimal life satisfaction) to 35 (maximal life satisfaction) is derived by summing the responses to all 5 items. Validity and reliability of the SWLS has been demonstrated (Diener et al. 1985; Pavot and Diener 1993; Vassar 2008). The scale's internal-consistency were examined among different samples where the mean Cronbach's  $\alpha$  was 0.78 (Vassar 2008). The scale was validated using factor analysis and consistently demonstrated a uni-dimensional structure (e.g., Anaby et al. 2010; Arrindell et al. 1991). Cronbach's  $\alpha$  coefficient in this study was 0.86.

## 2.7 Data Analysis

In order to estimate the bivariable association between age, number of chronic conditions, balance confidence, mobility, social support, participation (accomplishment and satisfaction), and well-being we computed Pearson correlations. The strength of the correlation coefficients was interpreted according to Domholdt's (2000) classification where an  $r$  value smaller than 0.25 indicates a weak correlation, an  $r$  between 0.26 and 0.49 a low correlation, an  $r$  between 0.5 and 0.69 moderate correlation and a high correlation is considered when an  $r$  value is greater than 0.7. In order to estimate to what extent well-being was explained by participation (accomplishment and satisfaction), multiple linear regression was performed while controlling for personal factors (i.e., age, number of chronic conditions, balance confidence, mobility) and environmental factors (i.e., social support). Explanatory variables were entered hierarchically in 3 blocks/steps (Stevens 2002) which

allowed the researcher to evaluate the unique contribution of each block to the model by looking at the  $R^2$  change values. Hence three steps were performed: step 1 controlled for personal factors (i.e., age, number of chronic conditions, balance confidence and mobility) step 2 entered an environmental factor (i.e., social support), step 3 entered participation accomplishment and satisfaction with participation. In this method the variables entered in the last block would naturally have the lowest contribution in terms of levels of  $R^2$  change. This approach allowed us to infer whether participation (last block) has a unique contribution to well-being over and beyond the others blocks i.e., the personal and environmental factors (Stevens 2002).

The residuals were plotted to search for violations of the multiple regression assumptions in terms of linearity, and equality of variance and normality. Multi-collinearity was diagnosed using two methods: (1) examining the simple correlation among the predictors where moderate to high correlation is a reason for concern, and (2) examining the Condition Index where any index greater than 15 indicates a possible problem and an index greater than 30 suggest a serious problem (Stevens 2002). The level of statistical significance was set at 0.05 for all statistical tests using SPSS 17. The sample size of 200 provided sufficient power to model up to 10 predictors at a conservative effect size ( $Fsq = .10$ ) with a power of .87 when  $\alpha = .05$  (Erdfelder et al. 1996).

## 3 Results

### 3.1 Sample Characteristics

Our sample included 200 participants, primarily female (65%) between the ages of 65 and 90 (mean = 75, SD = 6) living in the community where the majority (94%) owned their house/apartment. Their level of annual household income varied where 27% had \$20,000 or less whereas 21% of the participants' income was above \$60,000. Level of education also varied where 30% had completed some high school, 37% had a certificate and the rest (33%) had a university degree.

Participants had a range of 2–16 chronic conditions (mean = 5.9, SD = 2.6). Their level of accomplishment in daily activities and social roles (or total activities) was relatively high (see Table 1). In fact, 50% of the participants reported a level of accomplishment in participation that was greater than 9.55 (maximum score was 10). This indicates that our participants had a lower level of difficulty with a higher level of independence in participation accomplishment. Moreover, ninety percent of the participants scored less than 15 in the TUG test indicating a lower risk for falling (Whitney et al. 2005).

The mean life satisfaction score was 24.77 (SD = 6.44), falling between 21 and 25, and such scores represent the upper limit of the slightly satisfied level of the Satisfaction with Life scale (Pavot and Diener 1993).

### 3.2 Personal Factors, Social Support, Participation and Life Satisfaction

Pearson correlation between the six participation scores generated from the LIFE-H revealed that accomplishment of daily activities and accomplishment of social roles had a similar strength of correlation with the depended variable i.e., life satisfaction ( $r = 0.32$ ,  $p < 0.001$ ,  $r$

= 0.25,  $p < 0.001$ , respectively). Moreover, these two scores had a strong correlation with each other ( $r = 0.67$ ,  $p < 0.001$ ). Similarly, examining the satisfaction scores revealed that Satisfaction with daily activities and satisfaction with social roles had similar strengths of correlation with life satisfaction ( $r = 0.38$ ,  $p < 0.001$ ,  $r = 0.34$ ,  $p < 0.001$ , respectively) and these two score had high correlation with each other ( $r = 0.77$ ,  $p < 0.001$ ). Based on that, we decided to include in the regression model the total scores of each of these scales: accomplishment and satisfaction as the total scores encompassed both daily activities social roles. Consequently, a chance for multi-nonlinearity problem was diminished.

Table 2 summaries the Pearson inter-correlation between the variables entered in the regression model. Both elements of participation (accomplishment and satisfaction) in total activities (daily activities and social roles) were significantly correlated with life satisfaction where satisfaction with participation had a relatively stronger correlation (see Table 2). The rest of the explanatory variables number of chronic conditions, mobility, balance confidence and social support were significantly associated with life satisfaction with the exception of age. Overall, the inter-correlations among the explanatory variables in the model were low to moderate.

Table 3 summarizes the models for explaining life satisfaction throughout the 3 steps. Based on the  $R^2$  change values, the first step, i.e., personal factors, accounted for 20% of the variance, adding social support contributed an additional 8% to the variance ( $F$  change = 20.9,  $p < 0.001$ ) where adding satisfaction with participation, in step 3, contributed 3% more ( $F$  change = 4.7,  $p = 0.01$ ). In other words, satisfaction with participation had a unique contribution to the model over and beyond one's personal factors and social support.

Overall, 31% of the life satisfaction variance was explained by number of chronic conditions, social support and one aspect of participation i.e., satisfaction with participation. Notably, the accomplishment aspect of participation did not play a significant role in the model. Satisfaction with participation and number of chronic conditions had similar magnitudes of importance to the model based on the beta coefficients ( $\beta = 0.18$ ,  $p = 0.03$ ,  $\beta = -0.22$ ,  $p = 0.001$ , respectively) while social support had slightly stronger association ( $\beta = 0.26$ ,  $p < 0.001$ ).

## 4 Discussion

The study's first hypothesis was that participation (accomplishment and satisfaction) would have a unique and independent contribution to well-being in the presence of personal factors (i.e., age, number of chorionic condition, mobility, and balance confidence) and environmental factors (i.e., social support). This hypothesis was partially confirmed while examining participation in total activities (social roles and daily activities). One component of participation, i.e., satisfaction with participation, had a unique but relatively small (3% additional variance) contribution to older adults' well-being over and beyond their personal factors and social support. It is not supersizing that the unique contribution of satisfaction with participation was the smallest (3%) as it was the last variable to be entered. Notably, the Beta coefficients indicated that the magnitude of the satisfaction with participation was relatively similar to the rest of the variables in the model (i.e., number of chronic conditions



and social support) and the bivariate correlation indicated that satisfaction with participation had relatively the strongest correlation with life satisfaction.

It seems plausible that participation would have had further contribution in this model if our sample had a greater degree of participation restriction or more severe disability. Not only did our sample have relatively high scores in participation accomplishment and therefore required minimal assistance to accomplish life habits but their mean level of life satisfaction was within the normative data of non-clinical populations (Pavot and Diener 1993). Furthermore, the majority of the participants (90%) recorded TUG times that were <15 s indicating a low risk for falling (Whitney et al. 2005). Thus, our sample was characterized by a minor level of disability. A broader range of disability might have yielded different results. The recruitment method, i.e., 'shelf-talker' may be limited in attracting participants that have a relatively good level of community mobility. Thus, future studies should examine participants with a broader range of disability and participation levels.

Our second hypothesis that satisfaction with participation would be more important to well-being than accomplishment was also confirmed. Moreover, our results indicated the accomplishment of participation did not function as a significant predictor whereas satisfaction with participation was. In other words, well-being was explained by how satisfied individuals were with their ability to do daily activities and social roles (Satisfaction), but not necessarily the extent they were able to undertake the activities (Accomplishment). These findings bring substantial support to Levasseur et al. (2004a) preliminary findings concerning the association between participation and well-being. Although they found that the satisfaction scores had relatively higher correlation with well-being compared with the accomplishment scores they could not infer which variable is more important due to the nature of their analysis (i.e., simple correlation). Hence, our results which are based on regression analysis provide support for the claim that the satisfaction component of participation is more important to well-being than the accomplishment one. Furthermore, our findings support Van Campen and Iedema's (2007) theoretical assumption that subjective experience derived from participation (e.g., level of satisfaction with performance) is more important to well-being than the performance itself (i.e., the objective aspect of participation or level of accomplishment).

Our findings can also be explained in the context of the disengagement theory of aging. This theory suggests that older adults feel comfortable with their withdrawal from social activities and actually seek out more passive social roles (Cumming 1961). Therefore, older adults may not regard their performance as significant in affecting their well-being. In fact, older adults are able to set themselves alternative attainable goals which may protect the self and maintain well-being (Wrosch et al. 2004; Wrosch et al. 2005). For example, a grandmother who is no longer able to prepare her best dish for her grand-children when they come for a visit can still be engaged in and satisfied with this social role (e.g., maintaining a close relationship with her family members) by sitting in the kitchen and guiding her daughter in how to follow the recipe.

Response shift may also explain our results. For instance older adults may accept their health condition as part of their aging process and therefore modify their expectations of life,

setting more realistic and achievable goals (Carr et al. 2001). Moreover, according to Diener et al. (1999), well-being is gained when one's goals and needs are reached. Thus, as people progress toward achieving their goals (particularly their more valued goals), they are likely to be more satisfied in life. For example, one might place greater value on the life habit of 'maintaining a close relationship with his/her children' than on 'planning budgetary and financial needs'. Therefore, engaging in the former (which is more valued) might have a greater impact on that person's well-being than engaging in the latter even though one may be equally satisfied with their performance of both activities. Future studies should take into account the value that individuals attribute to each activity he/she is engaged in. It has been suggested that the meaning imbued to one's activities is the key to a happy life (Christiansen 1999; Freysinger et al. 1993; Law 2002).

Finally, well-being is a complex concept that might be influenced by other factors such as personality (Diener et al. 1999) and locus of control (Hendry and Mcvittie 2004). Therefore, further studies are warranted to clarify how additional factors influence participation and how participation influences well-being.

This study has limitations. A convenience sample was used and therefore the results may not generalize to the entire older adult population. However, the sample had a similar distribution of chronic health conditions to a representative sample of the Canadian population (Rockwood et al. 2004). The findings herein are applied to the population of older adults experiencing minor disability and living at home in the community. However, this population is an important group to study because of their potential transition to frailer states. Intervention at this stage can play a critical role in delaying if not transforming this transition. The design used in this study is cross-sectional, and therefore the results imply only association and not causation. Future studies might consider using longitudinal or an experimental design to examine the effect of health care professionals' intervention on participation and well-being amongst older adults living with and without disability. Intervention studies aimed to affect well-being might address satisfaction with participation rather than the actual participation (accomplishment) as well as aspects of social support as these are factors not only found to be influential in this study over and beyond chronic conditions but are also amenable to change.

In conclusion, this is the first study to provide empirical support for what has been only a theoretical assumption to date. That is, we have shown that satisfaction with participation has a unique contribution to the well-being of older adults beyond personal factors (number of CC and one's capacities) and social support. More specifically, our results suggest that what is important to well-being is the experience derived from the participation (i.e., satisfaction) rather than the performance itself (i.e., accomplishment).

These findings present clinical and political implications. As clinicians recognize that a client's satisfaction with participation plays a significant role in well-being, they may be well positioned to enhance their client's participation and promote their well-being. In the political avenue, when communicating with policy makers, this study might serve as evidence to support increased opportunities for participation for older adults and hence their well-being.

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**Table 1**

Descriptive statistics of variables in the models (n=200)

Variables	Min	Max	Mean	SD
Age	65	90	75	6.01
No. of chronic conditions	2	16	5.88	2.58
Mobility	5.4	30.7	11.02	3.89
Balance self-efficacy	14	100	81.13	17.9
Social Support	1	18	14.73	3.26
Accomplishment of participation	5.71	10	9.36	0.62
Satisfaction with participation	2.74	4.98	4.26	0.46
Life satisfaction	7	35	24.77	6.44

**Table 2**

Pearson Inter-correlation matrix for potential variables in the final model

Variables	Life Satisfaction	Age	# of CC	Mobility	Balance Confidence	Social Support	Accomplishment of participation	Satisfaction with participation
Life Satisfaction	-	-.05	-.36**	-.27**	-.30**	0.41**	0.30**	0.39**
Age		-	-.010	0.33**	-.16*	-.03	-.14	-.12
# of CC			-	0.24**	-.32**	-.24**	-.26**	-.27**
Mobility				-	-.63**	-.22**	-.052**	-.38**
Balance confidence					-	.25**	.50**	.4**
Social support						-	.13	.38**
Accomplishment of participation							-	.58**
Satisfaction with participation								-

# of CC = number of chronic conditions

\*\* p < 0.01

**Table 3**

Model summary for predicting life satisfaction by 3 blocks: personal factors, social support, and participation in Total activities (Accomplishment and Satisfaction)

	<b>Block I</b> Personal factors <b>β</b>	<b>Block II</b> Personal factors & social support <b>β</b>	<b>Block III</b> Personal factors with social support & participation <b>β</b>
Age	0.02	0.01	0.03
No. of chronic conditions	-0.29 ***	-0.24 ***	-0.22 **
Mobility	-0.16	-0.12	-0.07
Balance confidence	0.14	0.14	0.04
Social support		0.3 ***	0.26 ***
Accomplishment of participation			0.07
Satisfaction with participation			0.18
F	11.5 ***	14.3 ***	11.1 ***
F change	11.5 ***	20.9 ***	4.7 *
Total R <sup>2</sup>	0.20	0.28	0.31

\* p < 0.05;

\*\* p < 0.01;

\*\*\* p < 0.001