



WELLSO 2015 - II International Scientific Symposium on Lifelong Wellbeing in the World

Predictors of Life Satisfaction among Older Adults in Siberia

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Abstract

<http://dx.doi.org/10.15405/epsbs.2016.02.51>

Life satisfaction is one of the constructs that constitute subjective well-being and thus represents an important measure in evaluating the quality of life in older adults. The goal of this study was to identify which predictors were more strongly associated with life satisfaction in a community of older adults living in Tomsk (Siberia, Russia). We analysed the preliminary data from the Monitoring Wellbeing in Older Adults Survey conducted in 2014. A subset of items corresponding to socio-demographic, physical and psychological health, social support, social interaction, and independence aspects were extracted and included in the analysis. Two hundred eighty-four respondents (212 female, age range: 52-91) participated in the study. In this sample, 68% of the respondents reported to be satisfied with their life. Logistic regression analysis showed that having a higher income level, a well-equipped house, and a lower level of anxiety and loneliness are associated with an increase in life satisfaction in older adults. These results suggest that both material aspects and psychological health could play an important role in determining the quality of life of older adults. This study provides helpful clues about which factors should be more deeply investigated in the future development of the survey.

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Keywords: Keywords should be separated by a semi-colon ; Times New Roman 8

1. Introduction

Today's generations of the world population are becoming older than former generations and projections show that by 2050 older adults (aged 60 or over) will represent about 20% of the population (Harper, 2014). This demographic phenomenon will pose demanding socio-economic and health challenges to the societies. In order to deal with it, it is of crucial importance to study and understand the needs of older adults and to evaluate what affects their quality of life.



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Life satisfaction measures global cognitive judgement with one's quality of life (Diener, 1985) and is one of the factors that determine subjective well-being (Diener, 1984). It is one of the aspects that determine successful aging, and thus quality of life (Palmore, 2002). Life satisfaction measures have been widely used in the last decades (Diener, 2015) and its level changes over the life span according to a U-shaped curve (Blanchflower, 2008). This construct is considered to be an important predictor for psychological well-being (Diener, 1999). Studies have found that life satisfaction among older adults is influenced by many different factors like demographic factors (e.g., age (Meléndez, 2009); income (Li, 2013), physical health (Gana, 2013; Hsu, 2012), and housing conditions (Oswald, 2012).

Life satisfaction was often measured by taking the mean of a single item (e.g., "All things considered, how satisfied are you with your life as a whole these days?" in the World Value Survey (www.worldvaluessurvey.org) or the Gallup World Poll (2008); "Taking all things together, how happy would you say you are?" in the European Social Survey (2012)). Similarly, in this study we adopted a single item measure of life satisfaction.

In this exploratory study we examined the preliminary data from a survey administered to a community of older adults living in Tomsk (Siberia, Russia). It aimed at identifying which predictors are more strongly associated with life satisfaction. We included in the analysis socio-demographic, physical and mental health, social support, social interaction, and independence aspects. The results will help to understand which are the most important factors that should be studied in more detail in a follow-up study.

2. Method

2.1. Data

Study data was extracted from the Monitoring Wellbeing in Older Adults Survey, conducted by the Economics Department at the Tomsk Polytechnic University in 2014. This survey was developed to study different aspects of older adults and included about 100 items. These items included a wide range of dimensions from psychological status to technological skills. For the purpose of this study, we selected only a subset of items corresponding to possible predictors of life satisfaction.

Researchers interviewed 284 older adults (Female: 212) aged 50 or older (Age range: 52-91 years) who lived in Tomsk, Russia. Respondents were interviewed face-to-face at their home. The survey was in Russian and all the participants were native speakers or proficient in Russian.

2.2. Measures

The predictors of life satisfaction included in the analysis were socio-demographic variables (gender, age, education, income, living status, type of house, housing equipment), physical and psychological health (self-rated health, loneliness, anxiety), social support (need help, ready-to-help-others, providing-help-to-relatives, providing-help-to-non-relatives), social interaction (membership to a local group), and independence (autonomy in decision-making).

Life satisfaction

Life satisfaction was measured with the item “How satisfied are you with your life?” Respondents rated it on a 5-point Likert scale (1 = dissatisfied, 2 = somewhat dissatisfied, 3 = neither satisfied nor dissatisfied, 4 = somewhat satisfied, 5 = completely satisfied). This predictor was encoded into a binary variable: satisfied (somewhat satisfied and completely satisfied) and dissatisfied (dissatisfied, somewhat dissatisfied, neither satisfied nor dissatisfied).

Socio-demographic predictors

Respondents reported gender, age (in years), education (up to high school diploma, university degree or more), income (three categories: from 6 to 12 thousand Russian rubles per month, from 13 to 18 thousand Russian rubles per month, more than 18 thousand Russian rubles per month), living status (live alone, live with relatives), type of house (apartment, communal apartment (коммунальная квартира)/hostel, detached house). Housing equipment was measured with the item “Is your dwelling well-equipped?”. Respondents could select between well equipped, enough equipped, and poorly equipped. These categories represent different levels of basic facilities (e.g., heating, hot and cold water, etc.) available in the house.

Physical and psychological health predictors

Health was measured with the item “How would you estimate your health compared to your age mates?” Respondents rated it on a 5-point Likert scale (1 = poor, 2 = in line with my age, 3 = average - neither good nor bad, 4 = good, 5 = very good). Since the determination of the ordinal scale of this item was not clear for the participants (i.e., it is not clear how to sort answers “in line with my age” and “average - neither good nor bad”), this predictor was encoded into a binary variable: Healthy (good and very good) and unhealthy (poor, in line with my age, and average - neither good nor bad). Loneliness was measured with the item “How often do you feel lonely?” Respondents rated it on a 4-point Likert scale (1 = almost never, 2 = sometimes, 3 = often, 4 = always). Since this item had a very skewed distribution (almost never = 266 respondents, sometimes = 176, often = 36, always = 4), it has been re-encoded as a binary variable: not lonely (almost never) and lonely (sometimes, often, always). Anxiety was measured with the item “Did you experience anxiety during the past 12 months?” Respondents rated it on a three-points Likert scale (1 = I was always worried about something – with or without reason, 2 = sometimes, 3 = very rarely – usually if something goes wrong).

Social support predictors

Need help was measured with a dichotomous answer by the item “Note whether you are in need of help in household chores?” A multiple choice item (“Do you help other people (with advice, sympathy, etc.)? Whom?”) was used to measure the aptitude to help others. Respondents could select one or more answers among: I am ready to help anyone who needs my help, I help my relatives, I help my friends, and I help my neighbours. This multiple choice item was re-encoded into three dichotomous predictors.

The predictor ready-to-help-others encodes the I am ready to help anyone who needs my help answer; the predictor providing-help-to-relatives encodes the I help my relatives answer; the predictor providing-help-to-non-relatives encodes both the I help my friends and I help my neighbours answer (yes = at least one answer was selected, no = neither variable was selected).

Social interaction predictor

Membership to a local group was measured with the item “Are you a member of a local community? Which one?” Respondents could select one or more of the following categories: Householder community, veteran's community centre, gardening cooperative community, cultural-educational centre, religious community, other community, not a member of a community. This item has been re-encoded as a binary variable: No (not a member of a community) or yes, if the respondent was a member of at least one group.

Independence predictor

Autonomy in decision-making was measured with the item “How do you usually make important decisions?” Respondents could select one of the following categories: I always make decision by myself, I consider the opinion of my relatives, I consider the opinion of my friends/neighbours, I ask to the experts, I never make decision by myself. This item has been re-encoded as a binary variable: Autonomous (I always make decision by myself) or not-autonomous, if the respondent selected one of the other answers.

2.3. *Analysis*

The relation between life satisfaction (dependent variable) and all the predictors has been studied with a logistic regression model. Statistical significance was set at 0.05. Statistical analyses were performed using R (R Core Team, 2015).

3. **Results**

Descriptive statistics of the sample are reported in Table 1. The prevalence of life satisfaction was 68% of the sample.

Table 1. Descriptive statistics of the sample

Variables	means (SD = standard deviation) or percentages (N = number of participants)
Life satisfaction (satisfied)	68% (N=192)
Gender (male)	25% (N=72)
Age	65 (SD=7.26)
Education (university or more)	54% (N=152)
Income	
From 6 to 12 thousand r.	30% (N=86)
From 13 to 18 thousand r.	26% (N=73)
More than 18 thousand r.	44% (N=125)
Living status (with relatives)	74% (N=211)
Type of house	

Flat	81% (N=230)
Communal apartment/hostel	2% (N=5)
Detached house	17% (N=49)
Housing equipment	
Well equipped	86% (N=245)
Enough equipped	9% (N=26)
Poorly equipped	5% (N=13)
Health (healthy)	18% (N=51)
Loneliness (lonely)	49% (N=140)
Anxiety	
Always	20% (N=58)
Sometimes	47% (N=133)
Very rarely	33% (N=93)
Need help (yes)	29% (N=81)
Ready-to-help-others (yes)	34% (N=96)
Providing-help-to-relatives (yes)	73% (N=207)
Providing-help-to-non-relatives (yes)	40% (N=114)
Membership (yes)	29% (N=82)
Autonomy in decision-making (autonomous)	40% (N=113)

The logistic regression models showed that 4 predictors were associated with life satisfaction: Income, housing equipment, loneliness, and anxiety (coefficient and p-values are reported in Table 2). Income significantly affected life satisfaction. In fact, respondents whose income was higher than 18 thousand rubles per month reported a higher level of life satisfaction compared to respondents whose income was between 6 and 12 thousand rubles per month ($B = 0.926$, $p < 0.05$), whereas no significant differences were found between responders with a 6 to 12 thousand rubles income and those with a 13 to 18 thousand rubles income ($p > 0.1$). Housing equipment also significantly affected the life satisfaction level. Respondents with a poorly equipped house reported a lower level of life satisfaction compared to respondents with a well equipped house ($B = -2.158$, $p < 0.05$), whereas no differences were found between well equipped and enough equipped categories ($p > 0.1$). Life satisfaction was also significantly associated with loneliness. Namely, respondents with a higher loneliness level reported a lower level of life satisfaction ($B = -1.369$, $p < 0.001$). Finally, life satisfaction was significantly affected by the anxiety level. Respondents who reported to “always” feel anxiety were associated with a lower level of life satisfaction compared to respondents who picked “very rarely” ($B = -1.090$, $p < 0.05$), whereas there was no difference when “sometimes” or “very rarely” was chosen. No other predictors showed to affect the life satisfaction level.

Table 2. Results of the logistic regression analysis; B: estimate coefficients; SE: standard errors; * $p < .05$, *** $p < .001$.

	B	SE	p-value	
Gender (male)	-0.430	0.367	0.241	
Age	-0.010	0.022	0.645	
Education (university or more)	-0.381	0.357	0.286	
Income (from 13 to 18 thousand)	0.445	0.407	0.274	
Income (more than 18 thousand)	0.926	0.409	0.023	*
Living status (with relatives)	-0.301	0.373	0.420	
Type of house (hostel)	0.429	1.161	0.712	
Type of house (house)	0.639	0.517	0.216	
Housing equipment (enough equipped)	0.404	0.634	0.524	
Housing equipment (poorly equipped)	-2.158	0.910	0.018	*
Health (healthy)	0.441	0.455	0.333	
Loneliness (lonely)	-1.369	0.327	< 0.001	***
Anxiety (always)	-1.090	0.444	0.014	*
Anxiety (sometimes)	-0.353	0.366	0.336	

Need help (yes)	-0.340	0.342	0.321
Ready-to-help-others (yes)	0.486	0.397	0.221
Providing-help-to-relatives (yes)	-0.097	0.430	0.822
Providing-help-to-non-relatives (yes)	0.308	0.328	0.347
Membership (yes)	-0.240	0.334	0.472
Decision-making (autonomous)	-0.422	0.315	0.181
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Hosmer-Lemeshow test: $\chi^2(8)=3.415$, $p=0.906$			

4. Discussion

This study aimed to evaluate which predictors were associated with life satisfaction among older adults living in a Siberian city. According to the logistic regression model, 4 predictors showed to be significantly associated with the life satisfaction level: Loneliness, anxiety, income, and housing equipment.

Consistently with previous research, we found that mental health is related with psychological well-being (Blanchflower, 2008; Ryan, 2001). In fact, loneliness and anxiety, 2 factors associated with mental health, showed to be significantly associated with life satisfaction.

Various studies reported that income has a significant impact on life satisfaction (Li, 2013; Katz, 2009). In our sample, we found that income was a significant predictor of life satisfaction. However, only an income level higher than 18 thousand rubles produced a significant higher level of life satisfaction compared with a reference level of 6 to 12 thousand rubles, whereas an intermediate income of 13 to 18 thousand rubles did not increase life satisfaction. This could be due to the fact that elderly spend a high amount of their income for drugs and for health services and thus only an income higher than 18 thousand rubles provides elderly with enough money to satisfy their needs. However, the higher the life satisfaction level reported by elderly with more than 18 thousand rubles a month could be partially due to the fact that this category is too wide and include also very high income. It would be interesting to evaluate how life satisfaction change considering a larger number of income levels.

Consistently with other studies (Nygren, 2007; Waziri, 2014) we found that housing attributes influence life satisfaction. In fact, a poorly equipped house showed to have a negative impact on life satisfaction. For elderly living in Tomsk, the basic facilities are a very relevant aspect for their quality of life. Housing equipment could be a relevant predictor of life satisfaction among elderly living in Siberia for 3 reasons. First, the extreme weather conditions make a comfortable and well equipped house a major concern for older adults. Second, not all houses in Tomsk are equipped with all basic services, e.g. the houses might not be connected with the central heating system of the city. Third, a poorly equipped house results in the need of a higher amount of physical activity (e.g., due to organizing heating resources and water inside the house) which can be very demanding for elderly.

Some limitations need to be considered. First, the sample was too small and thus this study is limited in representing the elderly population of Tomsk. A future administration of a new version of the survey should include an higher number of participants. Second, some items and answer option should be rephrased in a future version of the survey in order to be clearly understandable. For example, in the item "How would you estimate your health compared to your age mates?" the answer options should be symmetric, that is from "very poor" to "very good". Finally, the number of

participants in some levels of the predictors was very small (e.g., poorly equipped in the housing equipment item).

Another point to consider is the varying relevance of some factors in different studies. Gana et al. (Gana, 2013) stated that perceived health status influences life satisfaction in older adults, but other results indicate that health is not so important for the oldest-old people as long as they in a good social environment (Enkvist, 2012). Due to rising morbidity and diseases during aging, health influences the older peoples everyday life, but the incongruent results would require further investigation with health being a life satisfaction predictor (Enkvist, 2012).

Despite the very small number of respondents that answered “poorly equipped” (5%), this result suggests that housing aspects should be more deeply investigated in a future studies. In fact housing equipment could be a relevant factor to evaluate the quality of life in older adults living in Siberia.

A future version of the survey should focus on different aspects of housing equipment and housing satisfaction. In fact, further aspects like residential satisfaction (Rioux, 2011), environmental barriers in the house (Nygren, 2007) and usability of the house (Fänge, 2003) could be included in the future version of the survey. Moreover, the loneliness and anxiety predictors suggested that social interaction and mental health need to be more deeply investigated. For example, loneliness could be explored with a multi-item scale like the UCLA Loneliness Scale (Russell, 1996). Finally, the income item should include a larger set of answers in order to divide the sample into more precise income categories.

In this study, we investigated the factors that influence the life satisfaction level among older adults living in a Siberian city. Our results suggest that having a higher income level, a well equipped house, and a lower level of anxiety and loneliness can increase life satisfaction in elderly. Future research should include these four factors and further evaluate their effect on life satisfaction in Siberian elderly.

Acknowledgements

This work was supported by the project “Evaluation and enhancement of social, economic and emotional wellbeing of older adults”, under the agreement No.14.Z50.31.0029, Tomsk Polytechnic University.

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