

ORIGINAL ARTICLE

Factors associated with quality of life among the elderly in Baglung District, Nepal

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Received: 7 September 2017 Revised: 19 October 2017 Accepted: 31 October 2017

Available online: November 2017

Abstract

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J Pub. Health Dev. 2017;15(3):51-64

This community based cross-sectional study was conducted to investigate the factors associated with quality of life among the elderly in Baglung district, Nepal. The sample size was 403 elderly selected by multi-stage cluster sampling from Baglung district. The data were collected by face to face interview using structured questionnaires. The outcome variable was the World Health Organization Quality of Life (WHOQOL-BREF), while independent variables included socio-demographic factors and neighbourhood social and environmental factors. Descriptive statistics were used to describe the characteristics of the sample. Chi-square test and multiple logistic regressions were used to determine the association between independent variables and quality of life among the elderly.

The finding showed that approximately half of the elderly (51.1%) had high quality of life. Factors associated with the quality of life included age, gender, marital status, religious, family structure, social capital, neighbourhood aesthetic and crime. After adjusting other factors, high quality of life was detected among the elderly who were perceived high neighbourhood social capital (Adj OR = 2.52, 95% CI = 1.48-4.29), perceived high neighbourhood aesthetic (Adj OR = 3.16, 95% CI = 1.91-5.23) and perceived low crime (Adj OR = 3.94, 95% CI = 2.31-6.72) in neighbourhood comparing to their counterparts.

From the results of this study, interventions that can promote active aging, such as designing of age-friendly public spaces and pleasant social environments should be considered. Moreover, policy to improve quality of life towards the elderly should be seriously implemented.

Keywords: elderly, quality of life, physical environment, social environment, Nepal

ปัจจัยที่มีความสัมพันธ์กับคุณภาพชีวิตของผู้สูงอายุ ในเขตอำเภอบัลลุง ประเทศเนปาล

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ปัจจัยที่มีความสัมพันธ์กับคุณภาพชีวิตของผู้สูงอายุในเขตอำเภอบัลลุง ประเทศเนปาล

ว. สาธารณสุขและการพัฒนา 2560:15(3):51-64

การวิจัยในครั้งนี้เป็นแบบ ภาคตัดขวางเก็บข้อมูลในชุมชนเพื่อศึกษาปัจจัยที่เกี่ยวข้องกับคุณภาพชีวิตของผู้สูงอายุในอำเภอ บัลลุง ประเทศเนปาล ผู้สูงอายุจำนวน 403 คนได้รับเลือกจากการสุ่มตัวอย่างแบบหลายขั้นตอน เก็บข้อมูลโดยการสัมภาษณ์แบบตัวต่อตัวโดยใช้แบบสอบถามที่มีโครงสร้างชัดเจน ตัวแปรตามคือคุณภาพชีวิตตามหลักขององค์การอนามัยโลก (WHOQOL-BREF) ในขณะที่ตัวแปรอิสระ ได้แก่ ปัจจัยด้านสังคมและประชากรในระดับบุคคล และปัจจัยด้านสังคมและสิ่งแวดล้อมในชุมชนที่อาศัย สถิติเชิงพรรณนาใช้เพื่ออธิบายลักษณะของตัวอย่าง การทดสอบไคสแควร์และการถดถอยลอจิสติกพหุคูณใช้เพื่อหาค่าความสัมพันธ์ระหว่างตัวแปรอิสระกับคุณภาพชีวิตของผู้สูงอายุ

ผลการวิจัยพบว่าผู้สูงอายุประมาณครึ่ง (51.1%) มีคุณภาพชีวิตที่ดี ปัจจัยที่เกี่ยวข้องกับคุณภาพชีวิต ได้แก่ อายุ เพศ สถานภาพสมรส ศาสนา โครงสร้างครอบครัว ทุนทางสังคมในชุมชน ความเป็นระเบียบสวยงามในชุมชน และอาชญากรรมในชุมชน เมื่อปรับด้วยอิทธิพลของปัจจัยอื่นแล้ว คุณภาพชีวิตที่ดีพบในกลุ่มผู้สูงอายุที่รับรู้ถึงแหล่งทุนทางสังคมในชุมชนสูง (Adj OR = 2.52, 95% CI = 1.48-4.29) ผู้สูงอายุที่รู้สึกว่าการเกิดอาชญากรรมในชุมชนต่ำ (Adj OR = 3.16, 95% CI = 1.91-5.23) และรู้สึกว่าการเกิดอาชญากรรมในชุมชนต่ำ (Adj OR = 3.94, 95% CI = 2.31-6.72) เมื่อเทียบกับกลุ่มผู้สูงอายุที่รับรู้ถึงแหล่งทุนทางสังคมในชุมชนต่ำ ผู้สูงอายุที่รู้สึกว่าการเกิดอาชญากรรมในชุมชนต่ำ ผู้สูงอายุที่รู้สึกว่าการเกิดอาชญากรรมในชุมชนสูง

จากผลของการศึกษานี้ชี้ให้เห็นว่า การออกแบบพื้นที่สาธารณะที่เป็นมิตรกับผู้สูงอายุและสภาพแวดล้อมทางสังคมที่น่ารื่นรมย์ควรต้องได้รับการพิจารณาเพื่อส่งเสริมให้ผู้สูงอายุมีศักยภาพในการดำเนินชีวิต นอกจากนั้นนโยบายที่เน้นการปรับปรุงคุณภาพชีวิตให้กับผู้สูงอายุควรถูกนำมาใช้อย่างจริงจัง

คำสำคัญ: ผู้สูงอายุ คุณภาพชีวิต สิ่งแวดล้อมทางกายภาพ สิ่งแวดล้อมทางสังคม ประเทศเนปาล

Introduction

Aging is global phenomenon and the world populations in developed and developing countries are growing elderly.¹ The elderly population growth rate is higher than the general population growth worldwide. The world's population aged 60 years and above is 900 million in 2015, and it is expected to be 2 billion in 2050.² The percentage of elderly population is increasing because child mortality and fertility rate is decreasing but life expectancy is increasing. It is noted that life expectancy of people around 1960s was approximately 35 years whereas life expectancy in present day is approximately 70 years.³

Nepal is a developing country where is going to increase the pattern of elderly population.³ In 1991 census, there is only 2.43% and respectively in 2001 and 2011, there is 6.5% and 8.1% of elderly population in Nepal.³ The growth rate of elderly was 2.54% compared to only 1.35% of total population growth. This kind of demographic change has noticeable effects on formal and informal systems of family and older adults who are losing socio-economic support and care. According to 2011 census there was 10.20% of elderly population in Baglung district which was greater percentage compare to national data.⁴ The majority of elderly in Baglung district lived in rural areas. They were usually active and productive in their advancing years doing things such as taking responsibilities for child care, cattle herding, handicrafts and many more. A majority of elders depended upon agriculture and lived under the poverty. They suffered from deprivation, illiteracy, poor health and nutrition, low social status, discrimination and restriction on mobility.³⁻⁴

Nowadays, more people move from rural to urban area or international migration to seek better opportunity or employment and further education.⁵ The traditional values providing care and support for their senior members have dominated by changing needs of families, therefore children need to live independently in a nuclear family and the elderly people left at home are facing different types of problem in QOL.⁶ The increment of life expectancy lead the epidemiology transition of diseases from communicable disease to chronic non-communicable disease such as heart disease, cancer, musculoskeletal diseases (arthritis and osteoporosis), neurological disorders, mental, and chronic respiratory diseases.⁷ The burden of chronic disease diminish well-being of individual life and lead to negative economic and health system of the nation. Therefore, it is necessary to implement policies and programs focused on ensuring the fundamental rights of the elderly.⁵

In previous literatures, they showed that elderly people are affecting the quality of life by social capital, social cohesion, social connection, access to services, stress in neighbourhood, places for walking, neighbourhood surroundings/aesthetics and crime.⁸⁻¹⁰ For International research, there are many articles related to QOL among elderly. But in Nepal, there are very few research in QOL among elderly. They are especially focused on diseases like HIV/AIDS, Kidney disease, Diabetes, Cancer and Depression in Hospital based settings.¹¹⁻¹² Although, many aspects of the physical and social environment can affect people's health and quality of life. The research related with quality of life associated with physical and social environments among community based population in Nepal is still unknown. Therefore, the

country need a research to examine physical and social factors related with quality of life among community population. This research aims to examine the factor associated with quality of life inclusive of individual factor (socio-demography) and neighbourhood environmental factors (neighbourhood social factor and neighbourhood physical factor) among Nepal elderly focusing on Baglung district. The information from this research will notify health authority and related stakeholders in order to improve the quality of life among Nepal elderly especially in Baglung district.

Methods

The research design was a cross-sectional study. Multistage cluster sampling was used to collect data in Baglung district of Nepal during in April 2017. The data were collected through face to face interview using structured questionnaire. The participants were well explained about the procedure and benefits of the project, and informed consent was obtained from each respondent before starting the interview process. The sample size for the study was calculated using the 99% of confidence interval with acceptance error of 1 score and standard deviation of QOL of 7.47¹² score from Nepal. After adding about 10% of the sample size was 403 respondents of elderly population. By using the multi-stage cluster sampling with the inclusion criteria (elderly people aged 60 years and older who could communicate verbally and were willing to participate in the study), the participants were selected from the elderly people from the community.

A pre-test survey was conducted to test the reliability the questionnaire. The Cronbach's Alpha was 0.85 for WHOQOL-BREF questionnaire, 0.69

for neighbourhood social factor and 0.70 for neighbourhood physical factor. Moreover, the study was approved by the Institutional Review Board of Social Sciences from Mahidol University (Certificate of Approval No. 2017/045.0703). During data collection informed consent was taken from all study respondents.

Quality of life was measured from the World Health Organization Quality of life (WHOQOL-BREF) questionnaire-Nepali version, which has been validated with an older elderly population in Nepal showing a good validity of 0.7.¹³ The WHOQOL-BREF model is composed of 26 items for evaluating four main dimensions of QOL including physical, psychological, social relationships and environment domains. Each individual item of the WHOQOL-BREF model is scored from 1 to 5 on a response ordinal scale, with higher scores indicating a higher QOL. Three items of the questionnaire must be reversed before scoring. In this study, the sum score ranged from 26 to 130.¹⁴ Finally, we dichotomized the quality of life as poor and good, using the median as the cut-off point.

Neighbourhood environmental factors were assessed with two scales: (1) nine items "Neighbourhood social factor adapted from psychological and life style questionnaire¹⁵ and (2) twenty items "Neighbourhood Environment Walkability Scale-Abbreviated" (NEWS).¹⁶

(1) The neighbourhood social factor adapted from psychological and life style questionnaire consisted of two sections: social cohesion (four items, e.g., "I really feel part of this area.") (Cronbach's Alpha =0.9); and Social capital (five items, e.g., "Contact with direct neighbors.") (Cronbach's Alpha =0.7). In social cohesion, there are four questions which ranged from 1(strongly disagree)

to 7 (strongly agree). In social capital, there are five questions which ranged from 1 (totally agree) to 5 (totally don't agree). The subscale of social capital were reversed scored. Finally, the scores of each subscale were dichotomized as low and high, using the median as the cut point.

- (2) The Neighborhood Environment Walkability Scale-Abbreviated (NEWS) included in this study consisted of five sub-scales, including: (A) access to services (three items, e.g., "Stores are within easy walking distance of my home.") (Cronbach's Alpha = 0.7); (B) streets in my neighbourhood (two items, e.g., "There are many alternative routes for getting from place to place in my neighbourhood.") (Cronbach's Alpha = 0.8); (C) places for walking and cycling (eight items, e.g., "There are sidewalks on most of the streets in my neighbourhood.") (Cronbach's Alpha = 0.6); (D) neighbourhood aesthetic (four items, e.g., "There are many interesting things to look at while walking in my neighbourhood.") (Cronbach's Alpha = 0.6); and (E) crime (three items, e.g., "There is a high crime rate in my neighbourhood.") (Cronbach's Alpha = 0.8). The response options ranged from 1 (strongly disagree) to 4 (strongly agree). The subscale of crime were reversed scored. Finally, the scores of each subscale were dichotomized as low and high, using the median as the cut point.

The socio-demographic included: age, gender, caste, religious, marital status, occupation, education, family structure, habits of smoking and drinking alcohol and regular medical treatment.

Descriptive statistics were used to describe the general characteristics of the variables. Pearson Chi-square test was used to examine an association between each independent variable and QOL. Finally, significant factors from the Chi-square test were included in the multiple logistic regression to examine significant predictors for QOL. The level of significance for all analyses was set at 0.05.

Results

There were 403 elderly in this study. Age of the respondents ranged from 60 to 92 years with and average age of 69.83 years. 43.7% were males while and 56.3% were females. The majority were living with their spouse (74.2%) and followed Hinduism (84.4%). Nearly 85% were agricultures. Nearly 82% were literate. About three quarter (76.7%) lived in joint family. More than half of the respondents (51.6%) were having regular medical treatment as shown in Table 1.

Table 1 Distribution of respondents by socio-demographic characteristics

Variables	Number	Percentage
Age groups (years)		
60-75	316	78.4
76 and above	87	21.6
Mean=69.83, SD=7.45, Min=60 Max=92		
Gender		
Male	176	43.7
Female	227	56.3
Caste		
Dalit	49	12.2
Others caste	354	87.8
Religions		
Hindu	340	84.4
Other religions	63	15.6
Married status		
Married status	299	74.2
Other status	104	25.8
Occupation		
Agriculture	304	84.4
Other Jobs	63	15.6
Education levels		
Illiterate	74	18.4
Literate	329	81.6
Family structure		
Nuclear	94	23.3
Joint	309	76.7
Habits of smoking		
Smoking	223	55.3
Non-smoking	180	44.7
Habits of drinking alcohol		
Drinking	122	30.3
Non-drinking	281	69.7
Medical treatment		
No	195	48.4
Yes	208	51.6

Table 2 shows that half of elderly (50.6%) had high places for walking and cycling. More than half (52.4%) had high level of neighbourhood aesthetics. More than half (50.6%) had high level of crime in their neighbourhood. More than half (57.3%) had

Table 2 Distribution of respondents by the neighbourhood environmental factors and QOL

Variables	Number	Percentage
Neighborhood social factor		
Neighborhood social cohesion		
High	204	50.6
Low	199	49.4
(Median = 27, QD = 3.5, Min = 5, Max = 28)		
Neighborhood social capital		
High	220	54.6
Low	183	45.4
(Median = 21, QD = 1.5, Min = 5, Max=25)		
Neighborhood physical environmental factor		
Access to services		
High	229	56.8
Low	174	43.2
(Median = 11, QD = 1, Min = 4, Max = 12)		
Streets in my neighbourhood		
High	279	69.2
Low	124	30.8
(Median = 7, QD = 1, Min = 2, Max = 8)		
Places for walking and cycling		
High	231	57.3
Low	172	42.7
(Median = 23, QD = 2.5, Min = 14, Max =31)		
Neighbourhood aesthetic		
High	211	52.4
Low	192	47.6
(Median = 14, QD = 1.5, Min = 4, Max = 16)		
Crime		
High	204	50.6
Low	199	49.4
(Median = 11, QD = 2, Min = 3, Max = 12)		
Quality of life		
Good	206	51.1
Poor/normal	197	48.9
(Median = 97, QD=16, Min = 54, Max =126)		

Table 3 shows the significant factors with quality of life among the elderly. The significant factors included age, gender, religious, marital status, education, family structure, regular medication, social cohesion, social capital, streets neighbourhood, neighbourhood aesthetic and crime.

Table 3 Association between independent variables and the quality of life

Factors	Quality of life		Unadjusted OR (95% CI)	P-value
	n	High	Low	
		%	%	
Age groups (years)				
60-75	316	60.1	39.9	6.69 (3.72-12.04)
76 and above	87	18.4	81.6	1
Gender				
Males	176	63.1	36.9	2.37 (1.58-3.55)
Females	227	41.9	58.1	1
Religion				
Hindu	382	55.6	44.4	3.39 (1.87-6.15)
Other religions	21	33.3	66.7	1
Marital status				
Married status	252	57.5	42.5	2.79 (1.74-4.46)
Other status	151	32.7	67.3	1
Education				
Illiterate	74	25.7	74.3	1
Literate	329	56.8	43.2	3.81 (2.17-6.71)
Family structure				
Nuclear	94	35.1	64.9	1
Joint	309	56	44	2.35 (1.46-3.80)
Regular medication				
No	195	56.4	43.6	1.51 (1.10-2.24)
Yes	208	46.2	53.8	1
Social cohesion				
Low	204	42.2	57.8	1
High	199	59.8	40.2	2.04 (1.37-3.3)
Social capital				
Low	210	44.3	55.7	1
High	193	56.8	43.2	1.66 (1.16-2.46)
Streets neighborhood				
Low	124	34.7	65.3	1
High	279	58.4	41.6	2.65 (1.71-4.11)
Neighborhood aesthetic				
Low	192	64	36	3.03 (2.02-3.24)
High	211	37	63	1
Crime				
Low	199	39.7	60.3	1
High	204	62.3	37.7	2.51 (1.68-3.74)

Table 4 shows that age, gender, marital status, religious, family structure, social capital, neighbourhood aesthetic and crime were significant associated with QOL. After adjusting other factors, the younger elderly group (60-75 years) was six times more likely to have high QOL than the older age group (76 years and over). Elderly who were male were about two

times more likely to have high QOL than female. Elderly who lived in joint family were nearly three times more likely to have high QOL than nuclear family. Elderly with high social contact in neighbourhood were nearly three times more likely to have high QOL than those with low social contact in neighbourhood.

Table 4 Multiple logistic regression for predictors of QOL among the elderly

Variables	Adj. OR	95% CI for OR		p-value
		Lower	Upper	
Age groups (years)				
60-75	5.96	3.01	11.8	<0.001
76 and above	1			
Gender				
Males	2.45	1.5	4.02	<0.001
Females	1			
Marital status				
Married status	1.96	1.09	3.51	0.024
Other status	1			
Religion				
Hindu	3.16	1.54	6.49	<0.001
Others status	1			
Family structure				
Joint	3.14	1.73	5.71	<0.001
Nuclear	1			
Neighborhood social capital				
High	2.52	1.48	4.29	<0.001
Low	1			
Neighborhood aesthetic				
High	3.16	1.91	5.23	<0.001
Low	1			
Neighborhood crime				
Low	3.94	2.31	6.72	<0.001
High	1			

Discussion

The study detected significant associations between neighbourhood environmental factors in particular neighbourhood social factors, and neighbourhood physical factors and quality of life among Nepalese elderly. In this study, the results showed more than half of the elderly (51.1%) were good in quality of life. The predictors of quality of life were age, gender, marital status, religious, family structure, neighbourhood social capital, neighbourhood aesthetic and crime.

In agreement with previous studies, this study found a significant positive relationship between age, gender, marital status, religions and family structure. The study in Sweden found that most of elderly over 75 years old needed help in their daily life activities, the oldest age level had lowest QOL compared with other age group.¹⁷ The study in Turkey, women had worse quality of life in daily activities compare to male, where medically diagnosed disease were present in elderly.¹⁸ The study by New York Heart Association, women had significantly worse general life satisfaction, physical function, and social and general health score than men.¹⁹

The study in New Haven, the people who deeply involve in religious activities have more friends and had better self-rated health, fewer depressive compared to less involved in religious activities.²⁰ The study in Iran and India indicated that living with their couple were happier and have more life satisfaction than widow and divorced women.²¹⁻²² These results agreed with this present study.

The study in Japan shows that living with extended family has high QOL, that they participated in

every activities like support system and family social network that helps to have better QOL in elderly.²³ The study in urban India mentioned that the joint families have better QOL compared to nuclear families.²¹ In Nepal, the traditional values providing care and support for their senior members have dominated by changing needs of families, therefore children need to live independently in a nuclear family and the elderly people left at home are facing different types of problem in QOL.

In agreement with previous studies, this study found a significant positive relationship between neighbourhood social capital and the quality of life among the elderly population.²⁴⁻²⁵ The study in Canada found only a sense of trust in people within one's family that associated with people's well-being, whereas a sense of trust in neighbourhood was not.²⁶ Another study in South Korea also found that social capital helped for subjective well-being leading towards life satisfaction and happiness.²⁷ The study in Thailand showed that social support has significant associated to QOL among elderly.²⁸ The study in Netherlands was shown that social support among neighbours may increase levels of well-being in elderly by way of providing affective support, increasing self-esteem and enhancing mutual respect.²⁹ Therefore, this study support that social capital is the important factor associated with quality of life. Elderly in Nepal involved in religious place, community people took all responsibility to solve all problem to their community people. They always contact directly or indirectly to the neighbourhood and friendly each other.

Regarding physical or built environments, the significant relationship of neighbourhood aesthetic and neighbourhood crime, and QOL in this study was also found in several previous studies.^{25, 30}

The study from Brazil and China supported that aesthetic neighbourhoods were associated with better mental health related QOL among the Brazilian 30 and with improved physical health related QOL among Chinese population.²⁵ Moreover, a study in the Netherlands also indicated that quality and quantity of greens pace were positively related with self-rated health among Dutch residents in an urban neighborhood.³¹ Another study from the United States pointed out that pleasantness surrounding people's homes provided the older people with easy and attractive routes with which to remain active and enjoy a good QOL.³²

Additionally, findings from a mixed method study indicate that a pleasant physical environment surroundings a social care institution plays a significant role in enhancing QOL amongst older people in Malaysia.³³ Nepal is one of the most beautiful places in the world with natural beautiful and interesting place. Therefore, this study's findings was support to previous study.

Concerning neighbourhood crime, in agreement with the results of this study, a prior study from Brazil found a significant association between neighbourhood criminal safety and physical as well as mental health related quality of life.³⁰ The study from US, fear of crime may negatively impact mental health, such as incite depression.³⁴ In Nepal, more people move from rural to urban area or international migration to seek better opportunity or employment and further education from rural to urban area or international

migration in youth, elderly did not trust other people who were migrate in that local area and this made negative impact on well-being and QOL.

There were some limitations to this study. The specific study area is in only one district of Nepal, therefore the results may not cover the whole district of the country. It was cross-sectional study, so the results cannot establish causal relationships between independent variables and quality of life among elderly. For the neighbourhood environmental factors they are comprised of many dimensions, such as transportation, housing, respect and social inclusion, and communication and information, some of which the present study did not include.

Recommendations

Many elderly in Nepal, especially in the peripheral areas, commit themselves as being dependent on their family for their living. Although it is a good culture of Nepal people to take care of the elderly, it can be a big burden for the family and caregivers to take a total care for the elderly. The institutional development and human resource should be initiated to identify the human and other resources needs of Ministry of health for building the capacity for effective design and implementation of programs related to ageing population. Information generation to identify the potential income generating activities particularly suited for senior citizens in urban and rural settings is very necessary.

The present study significantly supported the factors associated with quality of life among elderly. From the results of this study, interventions that can promote active aging in a community level, such as designing of age-friendly public spaces and pleas-

ant social environments in a community should be considered. Moreover policy to improve quality of life towards the elderly in a national level should be implemented.

Acknowledgements

We would like to express our greatest appreciation to all participants of the study including, research assistants, respondents and District public health office staffs.

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