SOCIAL DETERMINANTS OF HEALTH RELATED TO THE QUALITY OF LIFE AMONG THE ELDERLY IN DEVELOPING COUNTRY (STUDY IN CENTRAL JAVA, INDONESIA)

ANIK LESTARI[1]*, BHISMA MURTI[2], SAPJA ANANTANYU[1], DIFFAH HANIM[3]

[1]Doctoral Program in Health Promotion and Community Development, Sebelas Maret University, Surakarta, Indonesia, [2]Masters Program in Public Health, Sebelas Maret University, Surakarta, Indonesia, [3]Masters Program in Nutrition, Sebelas Maret University, Surakarta, Indonesia. Email: leslietarinick@yahoo.com

ABSTRACT

Objective: This study aimed to analyze the influence of social determinants of health on the quality of life (QOL) of the elderly.

Methods: This quantitative study was cross-sectional design conducted in Surakarta City and three Regencies, Central Java Province from January to March 2017. Multi-stage random sampling was chosen as a sampling technic to determine locally integrated health services (Posyandu Lansia) which used as a place for taking data. Incidental sampling was used to determine elder people as subjects at Posyandu Lansia. There were 224 elder people selected as subjects. The dependent variable is QOL of the elderly. The independent variables are age, education, income, behaviour, family support, peer support, and support of Posyandu Lansia (integrated health service post of the elderly). Data were collected using questionnaires and analyzed using path analysis.

Results: Descriptive results showed that the mean age of participants was 65.21 y ±9.89, the mean income was IDR 876.420 ± 125.267. The analytic results showed that QOL of the elderly was positively correlated with education ≥ senior high school (b=0.43, SE=0.43, p=0.668), income ≥Rp 876.420 per month (b=0.92; SE<0.001; p=0.357), positive behaviour (b=2.07; SE=0.18; p=0.039), and peer support (b=7.35; SE=0.22; p<0.001). QOL of the elderly showed a negative relationship with age (b=-1.06; SE=0.05; p=0.290).

Conclusion: QOL of the elderly increases with increasing levels of education, income, positive behaviour, and peer support. QOL of the elderly decreases with increasing age.

Keywords: Quality of life, Age, Education, Income, Peer support, Locus of control, Elderly.

INTRODUCTION

Recently, many countries in the world have successful increased life expectancy of their population which leads to change the structure and characteristics of the world population. In recent years, one-tenth of world population is occupied by elder people. By 2050, the proportion of elder people will increase five-tenth of the total world population. However, the quality of life (QOL) will decline while the individual age increases. Nowadays, there is still a big difference in QOL of elder people between developed and developing countries. In developed countries, the number of elder people has closely reached to five-tenth of total population and they are still active, healthy, and productive. These conditions are opposite with elder people who live in developing countries. It has increased incidence and prevalence of metabolic and degenerative diseases [1]. Therefore, the elder people tend to have degenerative diseases which lead to inactive, unhealthy, and unproductive depending on other people.

In theory, QOL is the individual's perception which is based on biological, psychological, and social aspects. According to the WHO (2007), QOL is defined as objective, expectation, standard, and concern of people lives in their cultural and social value contexts [2]. While, in a book of "Measuring QOL WHO-QOL," the definition of QOL includes interaction between internal and external factors such as individual physical health, psychological condition, level of freedom, social relationships, personal beliefs, and its relationship to the environment [3]. For the QOL in elder people, it can be defined as the ability to perform daily activities and to have freedom and functional conditions [4]. One study conducted in elder people stated that the determinants of QOL were having good social relationships such as maintaining social activities and a role in society. In addition, the elder people had better health and mobility and had enough money to meet their basic needs. They were able to live in a home and surrounding environment that were given pleasure, freedom, safe, and friendly and had access to local facilities including transportation [5]. Another study reported that Japanese elder people who had higher education had better health behavior, compared with their counterpart with lower education. The result of this study also indicated that lower QOL was significantly associated with older age (≥80 years), no pension, chronic diseases, and no health insurance [6].

Based on some studies described above, QOL could be used as an outcome measure of health programs for elder populations. Kai *et al.* evaluated the relationship between subjective assessment of QOL ("morale scale") and objective assessments such as active daily activities, work status, and life expectancy. This study conducted at 13.529 elder people who lived in a rural district in Japan, their findings showed that the QOL scale was positively associated with active daily living (ADL) and work status. Factors associated with lower ADL were age, lower instrumental ADL, and joblessness. Therefore, the QOL measurement and the objective variables can be incorporated into an assessment of the health status in the elder people [7].

Social support is very important in the elderly who have multiple chronic diseases and lose their relatives. Social support can be as a social determinant of health in population since this support has not only the effect of individual ability to cope loss of his/her family or relatives but also the capability to keep health of elder people, risk of various diseases, death, and other related risk factors.

In recent years, research related to QOL in elder people has been encouraged in some developed countries. However, a few studies have reported integrative factors that affected the QOL in elder people. In contrast with developed countries, there are limited studies which investigate QOL in elder people in developing countries. Therefore, this study aimed to examine social determinants of health related to QOL of the elderly in Indonesia.

METHODS

This observational analytic study with cross-sectional design was conducted in Surakarta city and three regencies (Sragen, Karanganyar, and Klaten), Central Java Province from January to March 2017. The target population was people who lived in the four locations and aged ≥45 years old, whereas source population was 39 elder people who stayed in a nursing home in Surakarta city and 185 who came to locally integrated health services (*Posyandu lansia*) in Sragen, Karanganyar, and Klaten. Selected subjects were determined using the incidental sampling technique and sample size used the rule of multivariate data analysis [8]. Participants provided informed consent, and the protocol of this study was approved by the Ethics Committee of the Faculty of Medicine, Universitas Sebelas Maret/Dr. Muwardi General Hospital No: 10/1/HREC/2017. The independent variables were social support of family, peer group, and community, age, income, education level, and behavior, while the dependent variable was the QOL in elderly. All data were collected using questionnaires. The QOL of the elderly was measured using WHOQOL-BREF (Revision 2012). Collected data were analyzed using path analysis. All statistical procedure was performed using IBM SPSS AMOS version 22.

RESULTS

Characteristics of research subjects

This study was analyzed internal and external factors in elder people who lived in Surakarta, Sragen, Karanganyar, and Klaten. From selected research subjects, five elder people excluded from this study. Table 1 shows the characteristics of research subjects, including gender, age, education level, home ownership, income, and physical exercise. Proportion of elder females (88%) was greater than proportion of elder male (12%), and their age was approximately 65 years old in which 45 years were the lowest age and 87 years were the highest age.

The majority of elder people had low education level (47.3% was illiteracy and 24.1% was graduated from elementary school). From the type of home ownership, 75.0% elder people resided in their own houses. The remaining elder people stayed in a nursing home and rented houses.

Since the minimum wage in four areas of study was different which ranged from IDR 1,200,000 to 1,400,000, we used mean to determine the income of elder people. Lower mean income was observed in 62.5% elder people, compared with elder people with higher mean income (37.5%). Walking and gymnastic were regularly performed by 58% of elder people.

Result of path analysis factors associated with the QOL in the elderly

The path analysis was used to analyze factors (social determinants of health) that affected the QOL in elder people, using IBM SPSS AMOS 22 software. Fig. 1 shows that QOL was directly affected by income, positive behavior, education, and peer support, while other variables indirectly affected the QOL through income and positive behavior.

Further analysis indicated that there were positive and negative effects on the QOL (Table 2). Peer support and positive behavior significantly increased 7.35 and 2.07 unit, respectively, better QOL, compared with elder people without positive behavior and peer support. Meanwhile, elder age had 1.06 higher risk of reduced QOL. Lower mean income (b=1.675, SE=0.001, and p=0.094), basic education (b=2.438, SE=0.157, and p=0.015), and peer support (b=3.310, SE=0.083, and p≤0.001), significantly increased the QOL through positive behavior. In addition, family support (b=3.066, SE=2.506, and p=0.002) and education (b=2.561, SE=6.781, and p=0.010) increased the QOL through income. These associations were statistically significant (p=0.002 and 0.01, respectively), whereas negative association was observed between age and income (b=−3.172, SE=0.816, and p=0.002). The other significant association appeared in family support and income (b=3.066, SE=2.506, and p=0.002).

DISCUSSION

This section discusses the results of a number of variables that affect the QOL of elderly which are peer support, positive behavior, education level, income, age, and external locus of control.

a. The relationship between peer support and the QOL in the elderly: Most of the subjects had high peer support. There is a positive direct effect between peer support and the QOL in the elderly, meaning that the greater the peer support will improve the QOL in elderly. This finding is consistent with several studies conducted in various parts of the world, including research by Ozturk *et al.* 2015 conducted in Turkey that social support positively affects the QOL of the elderly [9]. Research by Li *et al.* in 2014 on elderly people in China also found similarly that peer support positively affected emotional well-being in the elderly after controlling for demographic variables, general health, and life events. Similarly, studies from Ma *et al.* 2015 who conducted studies of elderly people in China who suffered from osteoporosis with the case–control study found out that QOL and social support were positively correlated in case groups [10].

b. The relationship between behavior and QOL in the elderly: There is a direct influence between positive behavior and QOL in the elderly, meaning that the better the behavior will improve the QOL in the elderly. The same thing also found in research conducted by Muckenhuber *et al.* in 2014 in Austria. It was conducted in the elderly aged over 65 years. The result was an improved trend toward personal health in general with the decline of risky behaviors such as smoking and drinking [11]. Research in Korea conducted by Lee *et al.* also obtained similar results that there is a statistically significant relationship between exercise behavior, not drinking alcohol, and regular blood pressure checking with QOL in the elderly [8].

c. The relationship between educational level and QOL in the elderly: There is a direct influence between the level of education and QOL in the elderly, meaning that the higher the level of education will improve the QOL in elderly. Punniyakotti *et al.* from India conducted the almost similar research and found that education, financial status, and social history were significant predictors of mental health [12].

Table 1: Characteristics of research subjects by demographic factors

No	Demographic factors	*n* (%)
1	Gender	
	Female	197 (88.0)
	Male	30 (12.0)
	Total	224 (100.0)
2	Age	
	≥Mean (65.21) years	117 (52.3)
	<Mean (65.21) years	107 (47.7)
	Total	224 (100.0)
3	Level of education	
	Illiteracy	106 (47.3)
	Elementary school	54 (24.1)
	Junior high school	34 (15.2)
	Senior high school	26 (11.6)
	Diploma	3 (1.3)
	Bachelor	1 (0.4)
	Total	224 (100.0)
4	Homeownership	
	Own house	168 (75.0)
	Stayed in a nursing home	34 (15.2)
	Rented house, etc.	22 (9.8)
	Total	224 (100.0)
5	Income	
	<IDR 876.420	140 (62.5)
	≥IDR 876.420	84 (37.5)
	Total	224 (100.0)
6	Physical exercise	
	Walking	54 (24.2)
	Elderly gymnastics	40 (17.8)
	Both (walking and gymnastics)	130 (58.0)
	Total	224 (100.0)

Primary data (January 2017–March 2017)

Table 2: Results of path analysis factors associated with quality of life among elderly

Relationship among variables	Path coefficient	SE	p value	ß**
Direct effect to quality of life in elderly				
Age	−1.06	0.05	0.290	−0.06
Education ≥senior high school	0.43	0.43	0.668	0.03
Peer support	7.35	0.22	<0.001	0.45
Income ≥876.420 rupiahs	0.92	0.004	0.357	0.06
Positive behavior	2.07	0.18	0.039	0.13
Indirect effect income				
Age	−3.17	0.82	0.002	−0.20
Education	2.56	6.78	0.010	0.16
Family support	3.07	2.51	0.002	0.20
Indirect effect behavior				
Education	2.44	0.16	0.015	0.16
Community support	0.81	0.06	0.419	0.05
Peer support	3.31	0.83	<0.001	0.23
Income	1.68	0.001	0.094	0.002

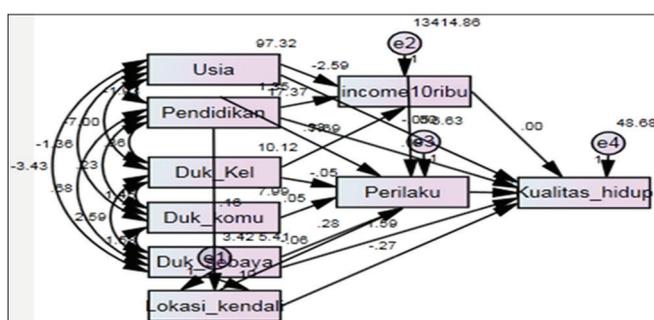n observation=224, GFI ≥0.90, NFI ≥0.90, CFI ≥0.90, RMSEA ≤0.05, p≥0.05

Fig. 1: The structural model of factors affected the quality of life of the elderly

It is also found in a study conducted by Muckenhuber *et al.* among the elderly aged over 65 years using the basic data from microcensus in Austria who found that the elderly with higher education had better self-health [11]. Research conducted by Li *et al.*, with the title the correlation between socioeconomic status and health self-management in the elderly found that education is one of the variables that affect health self-management in the elderly [13]. Stern also found that active lifestyles and higher levels of education were factors of protection against cognitive decline [14]. Leach *et al.* also obtained a similar relationship between the levels of education with reduced or lack of impairment [15].

d. The relationship between income and QOL in the elderly: There is a direct influence between income and the QOL in the elderly, meaning that the higher income of the elderly will improve the QOL. This is in accordance with the research conducted by Li *et al.* that monthly income is one of the factors that affect the health management of the elderly in addition to the level of education and location of residence (urban or rural) [13]. Similarly, research conducted in Japan by Shibuya *et al.* found out that individual income has a strong relationship with the condition of self-health [16]. According to Punniyakotti *et al.*, comorbidities and financial status are found to be the significant predictors of health-related QOL in geriatric patients [12].

e. The relationship between age and QOL in the elderly. There is a direct negative effect between age and QOL in the elderly, meaning that the increasing age will decrease the QOL. This is in line with a study conducted by Calero and Navaro who found that QOL is affected by age and cognitive status of the elderly, and the researchers found that cognitive status was more influential than age [17].

CONCLUSION

The conclusion of this study is that the QOL of the elderly will increase with increasing levels of education, income, positive behavior, and peer support. The QOL of the elderly will decrease with increasing age.

AUTHORS' CONTRIBUTIONS

All the authors have equally contributed in finalization of the manuscript. All the authors have approved the final article.

COMPETING INTEREST

There are no potential conflicts of interest regarding research, authorship, and/or in the publication of the article.

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