



# Measuring Quality of Life of Urban Poor Older People: Correlation with Physical Function, Mental Status, and Independence in Daily Activities

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**Objective:** The purpose of this study was to determine the association between quality of life and physical function, mental status, and independence in daily activities in urban poor older people. **Method:** A cross-sectional study was conducted on 33 older people living in Wirobrajan, Yogyakarta, Indonesia from February–April 2017. WHOQOL-BREF was used to assess quality of life, TUG, Berg Balance Scale and Borg test to assess physical function, MMSE and HVLT to assess mental status, ADL and IADL to assess independence in daily activities. **Results:** Older people aged 62–90 years were evaluated. Physical condition was strongly correlated to quality of life in physical health and psychological domains, mental status with quality of life in physical health, psychological and environment domains, independence in daily activities with quality of life in physical health and psychological domains. No significant correlation was found with quality of life in social relationships domain. **Conclusion:** This study concluded that the quality of life of urban poor older people was strongly and positively correlated with their physical function, mental status and independence in daily activities. Health programs to improve the physical function, mental status and independence in daily activities were recommended to increase the quality of life of poor older people living in urban areas.

**Keywords:** Physical Function, Mental Status, Independence in Daily Activities, Quality of Life.

## 1. INTRODUCTION

The number and percentage of elderly population in Indonesia kept increasing;<sup>1</sup> they constitute 7,18% (2007), 9,77% (2010), and predicted 11,34% (2020). High population of elderly people indicate higher life expectancy which could not be separated from ageing process. However, high life expectancy should be followed by the increase of health state. Studies on elderly are required for the development of suitable programs, including health program. The purpose of this study was to determine the association between quality of life and physical function, mental status, and independence in daily activities among urban poor elderly population.

## 2. MATERIALS AND METHODS

The study was conducted on 33 elderly people living in urban poor area Gampingan, Wirobrajan, Yogyakarta, Indonesia. Data were collected using a cross-sectional method from February–April 2017. Quality of life was measured by WHOQOL-BREF instrument that describe physical health domain, psychological domain, social relationships domain, and environment domain. Physical function was measured by Timed Up and Go test instrument, Berg Balance scale, and Borg scale. MMSE and HVLT

were used to assess mental state. Independence in daily activities was measured by ADL and IADL instrument. The physical function, mental state, and independence in daily activities data was analyzed with each domain of quality of life data using correlation test. Statistical power was set at  $*P < 0,05$ .

## 3. RESULT

The Study consisted of 21 women and 12 men living in Gampingan, Wirobrajan, Yogyakarta. Most of elderly participating in this study neither finished their elementary school nor had jobs. Their physical function measured by TUG showed a variation of 11–21 seconds out of the 33 subjects, 26 of them were able to stand up with little help and 25 did not feel tired after completing the TUG test. The measurement of mental state gave HVLT score 3–31 words and MMSE score 10–30. The subjects were mostly independent in their daily activities with or without tools and had good quality of life in all domains.

## 4. DISCUSSION

### 4.1. Physical Function and Quality of Life

Statistical analysis showed a strong correlation between physical function and quality of life in physical and psychological

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**Table I. Characteristic of subjects.**

Characteristic	Category	Total	
Age	60–69 years old	11	
	70–79 years old	12	
	80–89 years old	9	
	90 years old	1	
Education	No school	8	
	Ungraduated elementary	13	
	Elementary	6	
	Junior	2	
	Senior	3	
Job	College	1	
	Unemployment	16	
	Retirement	2	
	Traders	9	
	Freelancer	6	
Physical function			
	Min	Max	Mean
TUG	11	21	14,48
	Category	n	%
Berg balance scale	Stand up without help	7	21%
	Stand up with help	26	79%
Borg scale	Not at all	25	76%
	Very light	5	15%
	Light	2	6%
	Moderate	1	3%
Mental state	Min	Max	Mean
MMSE	10	30	23,48
HVLT	3 words	31 words	13,52
Independence in daily activities	Categorize	ADL/IADL	
ADL	Require not	20	21
	Need some	19	3
	Need some	18	6
	Need some	16	1
	Need some	14	2
IADL	Require not	16	3
	Require not	15	2
	Require not	14	4
	Require not	13	8
	Require not	12	3
	Require not	11	5
	Require not	10	3
	Require not	9	3
	Need assistance	8	2
Quality of life			
QOL domain	Total	Category	
Physical domain	18	Good	
	15	Poor	
Psychological domain	24	Good	
	9	Poor	
Social relationship domain	24	Good	
	9	Poor	
Environment domain	22	Good	
	11	Poor	

domains. It meant that physical condition would impact in some quality of life; low point of Berg Balance Scale is correlated with poor perception of quality of life.<sup>2</sup> Likewise, people with hand-arm vibration syndrome were also reported of having poor quality of life both in physical and psychological domains.<sup>3</sup>

In this study, no significant correlation was found between physical function and quality of life in social and environment domains. It meant that physical impairment would not affect the

**Table II. Correlation of physical function and quality of life.**

	QOL 1	QOL 2	QOL 3	QOL 4
TUG				
Pearson correlation	-0,572	-0,454	-0,136	-0,257
P	0,001	0,008	0,451	0,148
N	33	33	33	33
Borg scale				
Pearson correlation	-0,455	-0,095	-0,245	-0,310
P	0,008	0,598	0,169	0,079
N	33	33	33	33
Berg balance scale				
Pearson correlation	0,489	0,407	0,148	0,365
P	0,004	0,019	0,410	0,037
N	33	33	33	33

quality of life. A Study conducted with 20 heart failure patients in Midwestern City revealed that heart failure patients had their own ways to struggle with their disease; they tried to enjoy everything they have with their family and friends.<sup>4</sup> Apparently, similar situation was found among the subjects in Gampingan Yogyakarta. They mostly live close by their neighborhood and family. That situation could change one's perception from poor into the good one.

**4.2. Mental State and Quality of Life**

This study found a positive correlation between mental state and quality of life in all physical, psychological and environment domains. This meant that elderly who have good mental state also have good quality of life in the three domains mentioned above. Good mental state would support elderly to enjoy environmental utilization such as visiting a health care center, meeting their needs, and accessing all information-transportation.<sup>5</sup> A study conducted for hospitalized elderly patients found a correlation between MMSE and total score of quality of life which is measured by WHOQOL-BREF.<sup>6</sup>

Mental state, though affected by level of education, has no significant correlation with quality of life in social domain.<sup>7</sup> Most of the subjects in Gampingan did not complete their elementary education, but they enjoyed social support. A Study conducted for 1.692 diabetes patients showed a strong correlation between social interaction and low education population.<sup>8</sup> It meant that low education did not necessarily prevent someone from getting social supports that could make quality of life good in terms of social domain.

**4.3. Independence in Daily Activities and Quality of Life**

In this study independence in daily activities were found to correlate with quality of life in physical and psychological domains.

**Table III. Correlation of mental state and quality of life.**

	QOL 1	QOL 2	QOL 3	QOL 4
HVLT				
Pearson correlation	0,566	0,522	0,176	0,394
P	0,001	0,002	0,327	0,023
N	33	33	33	33
MMSE				
Pearson correlation	0,483	0,508	0,271	0,335
P	0,004	0,003	0,127	0,057
N	33	33	33	33

**Table IV. Correlation of independence of daily activities and quality of life.**

	QOL 1	QOL 2	QOL 3	QOL 4
<b>ADL</b>				
Pearson correlation	0,418	0,265	0,217	0,304
<i>P</i>	0,016	0,136	0,224	0,086
<i>N</i>	33	33	33	33
<b>IADL</b>				
Pearson correlation	0,581	0,438	0,293	0,125
<i>P</i>	0,001	0,011	0,098	0,489
<i>N</i>	33	33	33	33

A number of previous studies also showed a correlation between ADL-IADL and WHOQOL-BREF.<sup>9</sup> Ability to do daily activities independently could give a sense of satisfaction to elderly people. Elderly who could do activities independently show their physical ability and quality of life. Other study also showed positive correlation between independence in daily activities and quality of life.<sup>10</sup>

On the other hand, this study did not show significance correlation between ADL-IADL and quality of life in social and environment domains. It meant that elderly who need helps from others to do their daily activities still enjoy their activities, social interaction, and their surrounding environment. Indeed, family support, social interaction, and environment utilization in daily activities would make someone perception good.<sup>4</sup>

A study conducted in the Philippine reported that problematic relationship, including interpersonal violence among urban elderly had significant influence in their quality of life. Although living in an urban poor area, the subjects in Gampingan live in small area that enable them to make closer relationships among residents. It is more likely that the situation would prevail in the rural areas in the Philippine where elderly belong to harmonious households in a small, slow-paced community and closer relationships among residents.<sup>11</sup>

Some studies with urban and rural areas in the Philippine, however, reported the same sense of satisfaction with the availability and accessibility of the government programs. However, this situation may be indicative by several situations like availability of some facilities.<sup>11</sup> Similar situation was also found in Gampingan area which is also categorized as urban area. Elderly in Gampingan claimed that they able to reach the medical

government programs and feel the benefit of the programs. It means that the government should constantly manage their programs particularly to the poor areas, so they could feel the benefit and make their quality of life better.

## 5. CONCLUSION

This Study showed a strong correlation between physical function and quality of life among urban poor elderly people in terms of physical and psychological domains. Good physical function would support quality of life in terms of physical and psychological domains. The study also found that mental state and independence in daily activities were strongly correlated and quality of life in terms of physical, psychological, and environment. Health programs to improve physical function, mental status and independence in daily activities were recommended to increase the quality of life of poor older people living in urban areas.

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