# The Relationship of Treatment Compliance Level and the Quality of Life of Elderly Patients with Hypertension

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**Research Article**

# The Relationship of Treatment Compliance Level and the Quality of Life of Elderly Patients with Hypertension

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**ABSTRACT**
Health is one of the most important aspects in the life of elderly people. The increasing life expectancy and the increased age cause elderly to experience numbers of both physical and psychological problems. Physical condition such as chronic illness and psychological condition such as stress and depression can influence elderly's quality of life. The chronic illness condition pushed the elderlies to consume drugs all their life. However, compliance of medicinal activity might influence their quality of life. The objective of this research is to acknowledge the relationship of medicine compliance level with the quality of life. This research utilized an observational analysis with a cross-sectional design by including 115 elderlies. The research was conducted from March to May 2018. The required data was gathered by conducting guided interview and questioner distribution that measure quality of life and medical compliance. Chi-Square test was conducted to analyze the data with significance level of 0.05. From 115 elderlies, 64.4% of them are between the age of 60-74 years old and 67 samples (58.6%) are females. As much as 64.3% possess decent quality of life, and 35.7% of them possess low quality of life. The Chi-Square test result reveals that there is a significant relationship between medical compliance and the quality of life of elderly patients with hypertension (p=0.005). This research shows that there is a significant relationship of medical compliance level and quality of life.

**Keywords:** Quality of life, elderly, medical compliance

## INTRODUCTION

According to the World Health Organization (1994), quality of life is a perception of someone in a cultural and norm contexts about his place of living related with the objective, hope, standard, and concern for all his life1. Quality of life is not only related with individual judgment on their position in life, but also the existence of social and environmental contexts that also influence their quality of life (Trevisol et al., 2011; Leeuwen, 2019).

Quality of life is influenced by several factors such as individual spiritualism level, pride, health level, and social support from their families and their surroundings4. The overall quality of life on elderly people consists of four aspects which are physical, psychological, social, and environmental. When every aspect can be fulfilled, it is expected that the quality of life of elderlies will be better and more optimum (Leeuwen, 2019; Sutikno, 2011)]. Physical changes on elderly people will affect health, and their quality of life. Chronic illness on elderlies will cause medical problem and decrease of quality of life (QOL) (Garcia & Navarro, 2018; Zhou et al., 2018). Psychosocial changes happen on elderly people are highly related with physical changes, environment where they live, and their social relationship with the people (Garcia & Navarro, 2018).

Indonesia is placed fourth on the most populated countries after China, India, and the United States. As shown in World Health Statistic data on 2013, it shows that the number of Chinese citizen are 1.35 billion people, meanwhile Indians are at 1.24 billion people, the United States are at 313 million people, and Indonesia placed fourth with 242 million people (WHO, 2013). In five decades, the number of elderlies in Indonesia has kept on increasing into 23.4 million people (or 8.97%) of total citizen in 2017, with a composition of higher women elderlies than men, which are at 9.47% for women elderlies and 8.48% for men elderlies.

The increasing number of elderly people in Indonesia is influenced by the development of science and technology, and also socio-economical advances, which further leads to the

increase of health degree and the extension of life expectancy (Darmojo & Martono, 2014). The population of elderly people in Indonesia is expected to increase at 450,000 people per year (Darmojo & Martono, 2014). With the level of increase, in 2025 Indonesian elderly population will reach at least 34.22 million people (Statistik Indonesia, no year). One of the prevalence of chronic illness on elderly people is hypertension, which requires lifetime medical treatment marked by the emergence of headache and dizziness that would affect elderly people's physical condition. Previous studies reported hypertension occurrence prevalence on elderly people in Central Jakarta area is at 62.7% (Djaja, 2007).

Along with the increase of age, elderlies will experience changes on their quality of life. On aging process, a constant decrease of capacity will happen in human bodies, tissues, and cells. Aging process causes degenerative changes on human skin, bones, heart, arteries, lungs, neurons, and other body tissues, along with their cognitive ability. With limited regeneration ability, elderlies will be more vulnerable to various non-infectional diseases such as heart disease, cancer, diabetes, and chronic respiratory disease, or inflectional diseases which are caused by decreasing body immunity on elderlies (Djaja, 2007). Data obtained from previous researches have shown that elderly's prevalence with low quality of life is at 14.9% (Setiati et al., 2011).

Previous studies also stated that there is a relationship between medical compliance and the quality of life. A research conducted by Raisya et al. (2014) mentioned that there is a relationship between therapeutic medical treatment and the quality of life on elderlies. Similar finding was also concluded by Endah et al. (2016), which also mentioned that there is a relationship between medical compliance with patients' quality of life. There is also another study which concluded that there is a relationship between quality of life and therapeutic recommendation compliance on elderly patients with hypertension. The increase of quality of life also provided impact on the increase of compliance of medical treatment recommendation. Meanwhile compliance is negatively impacted by older age, longer illness duration, bad marital status, low education level, living alone, and poly-therapy involvement (Uchmanowicz et al., 2018). However, there is another study (Handayani & Dewi, 2017) which concluded that there is no relationship between medical consumption and patients' quality of life. These inconsistent research results require further examination. This research aims to determine the relationship between medical compliance and the quality of life of elderly people with hypertension.

## METHODOLOGY

This research utilized an analytic observational method with a cross-sectional research design, conducted at Social Home of Tresna Werdha Budi Mulia 1 located in Ciracas, East Jakarta on March to May 2018.

As much as 115 elderlies are appointed as subjects in this research. The inclusion criteria in this research are patients in age range ≥ 60 years old, patients with hypertension history, the ability to communicate, independent and do not require other people's help and willing to fill inform consent form. Elderlies with heavy or mild psychological disturbance, history of dementia or depression are excluded from this research. Sample size determination was conducted by using infinite formula finite with prevalence of 0.6210, with finite population value of 100 people the sample size required after drop out is at 15% or 115 subjects. The subjects are selected by using a consecutive non-random sampling.

Data collection was conducted by interview and questionnaire distribution to acknowledge socio-demographic characteristic (age, sex, education, and marital status) of the subjects. To measure quality of life, questionnaire of The World Health Organization Quality of Life (WHOQOL-BREF) (WHO, 2012) which consists of 4 dimensional questions which are physical health, psychological health, social relationship, and environment was utilized. The questionnaire was also completed with Morisky Medication Adherence Scales 8 (MMSA-8) questionnaire which contains 8 questions regarding medical compliance. Medical compliance level in this research is characterized into 3 groups which are: (i) low level (score of 3 to 8), (ii) middle level (score of 1 to 2), and (iii) high (score of 0). Elderly quality of life is categorized into two groups which are: (i) good (score of ≥74), and (ii) low (score of <74).

The data was descriptively presented in form of percentage. Chi-Square test was utilized to analyze the relationship between medical compliance and the quality of life of elderly people with hypertension. Significance level used in this research is at 0.05. The protocol of this research has already obtained ethical eligibility from Faculty of Medicine Research Ethics Commission with the issuance of decree No.25/KER-FK/2018.

## RESULTS

Socio-demographic data of 115 subjects shows that the subjects are dominated by elderlies with age range of 60-74 years old with a number of 74 (64.4%) respondents. 67 of the respondents (58.3%) are females. Based on their marital status, most of the respondents are divorced with

a number of 73 respondents (63.5%). Meanwhile based on their educational level, most of these elderlies are inadequately educated between elementary school and junior high school levels with population of 90 people (78.3%). Based on their medical compliance, 75.7% of the respondent is categorized as medium level compliance, 14.8% low level compliance, and the rest of them are in the high level compliance group. Subjects with good quality of life are 74 people (64.3%) and they with less quality of life are 35.7% of the total respondents.

The respondents' quality of life viewed from each domain shows the following results (Table 1). In physical domain, elderlies categorized with good quality of life are 61 people (53%), in psychological domain, the majority of the elderlies possess good quality of life are 80 people (69.6%). In psychological domain, majority of the elderlies possess good quality of life are 77 people (56.2%) of the total respondents. In social relationship domain, the majority of 64 people are having bad quality of life (55.7%). Meanwhile in environmental domain, the majority of 72 respondents (62.6%) were identified to possess good quality of life.

Chi Square test reveals that the relationship between age, sex and quality of life has no significance with value of p=0.200 and p=0.219. There is also no statistically significant relationship between marital status and quality of life with value of p=0.465. However, Chi Square test shows significant relationship between educational level, medical compliance, and quality of life with value of p=0.020 and p=0.005 (Table 2).

**Table 1: Characteristic of Research Subjects ((n=115)**

| Variable | Frequency | |
|---|---|---|
| | Amount | Percentage (%) |
| Age | | |
| 60-74 | 74 | 64.4 |
| 75-90 | 29 | 25.2 |
| >90 | 12 | 10.4 |
| Sex | | |
| Male | 48 | 41.7 |
| Female | 67 | 58.3 |
| Education | | |
| High | 25 | 21.7 |
| Low | 90 | 78.3 |
| Marital Status | | |
| Not Married | 24 | 20.9 |
| Married | 18 | 15.6 |
| Divorced | 73 | 63.5 |
| Medical Compliance | | |
| Low | 17 | 14.8 |
| Medium | 87 | 75.7 |
| High | 11 | 9.5 |
| Quality of Life | | |
| Good | 74 | 64.3 |
| Bad | 41 | 35.7 |

## DISCUSSION

The number of female elderlies is higher than male elderlies, which is at 9.47% for female elderlies and 8.48% for male elderlies. According to National Bureau of Statistics data, the life expectancy of female Indonesian is higher than male Indonesian, which is at 73.33 years for female and 69.3 years for male (Badan Pusat Statistik, 2019). Low quality of life which is at 35.7%, is higher than a research conducted by Setiati et al. (Setiati et al., 2011) which may be caused by differences on research subject characteristics, because in this research the subjects are elderlies with chronic hypertension disease. Meanwhile as obtained by Alfiani et al. (2013), 70% of chronic hypertension patients have low quality of life.

Based on the analysis conducted in our research, it revealed that there is no significant relationship between age, sex and quality of life. Similar result was obtained by previous researches which stated that age has no relationship with quality of life (Hong, 2015). Elderlies' quality of life can be better, or maintained if they are independent and

possess adequate physical health and social role so that they are able to stay active and enjoy their lives (Moe et al., 2012). However on another research (Nurmalita et al., 2019), it revealed that elderlies tend to have less quality of life. Age is highly connected with degenerative process and decrease of body function. Decreased organ function can lower physical, social, and mental abilities of elderlies and prevent them from practicing various activities that might be able to improve their quality of life.

It is easier for people from medium or high economic abilities to access good healthcare which would affect their quality of life (Yuliati et al., 2014). However, this result is not parallel with another research (Nurmalita et al., 2019) which shows that elderly females tend to have lower quality of life than elderly males. Post-menopause hormonal changes and higher life expectancy on females are the main cause of the condition. Elderly females tend to feel lonely, worry about their future, and do not have activities that would help them support their financial needs. Besides that, it is important to improve the elderlies' knowledge about health to motivate them to practice various exercises both physical and mental to improve four quality of life domains (Cristina et al., 2014; Freire et al., 2015; Ha et al., 2014; Gondodiputro et al., 2018).

**Table 2: Relationship between Age, Sex, Education, Marital Status, Medical Compliance and Quality of Life (n=115)**

| Variable | Frequency | | |
|---|---|---|---|
| | Bad (%) | Good (%) | P |
| Age | | | |
| 60-74 | 30 (40.5) | 44 (59.5) | 0.290 |
| 75-90 | 7 (24.1) | 22 (75.9) | |
| >90 | 4 (33.3) | 8 (66.7) | |
| Sex | | | |
| Male | 14 (29.2) | 34 (70.8) | 0.219 |
| Female | 27 (40.3) | 40 (59.7) | |
| Education | | | |
| High | 4 (16) | 21 (84) | 0.020* |
| Low | 37 (41.1) | 53 (58.9) | |
| Marital Status | | | |
| Not Married | 10 (41.7) | 14 (58.3) | 0.465 |
| Married | 8 (44.4) | 10 (55.6) | |
| Divorced | 23 (31.5) | 50 (68.5) | |
| Medical Compliance | | | |
| | 12 (70.6) | 5 (29.4) | 0.005* |
| Medium | 26 (29.9) | 61 (70.1) | |
| High | 3 (27.3) | 8 (22.7) | |

*p<0.05

In this research, we revealed that education level has a significant relationship with quality of life of elderlies with hypertension. This result is similar as study conducted by Gondodiputro (2018) which revealed that education level is proportional with quality of life. Higher education level will affect someone's ability to seek or access health information sources. The ability to access and digest health information plays an important role to create a life pattern or necessary preventive actions that would indirectly influence health status and finally their quality of life. Education is affecting the ability of an individual to understand their illness, how to treat it both by practicing treatment on drugs or non-drugs for example exercising, diet, and other treatments so that the condition of their illness especially chronic

hypertension illness can be well-controlled (Pimenta, 2016).

Our research also revealed that marital status does not have a significant relationship with quality of life. General factor that influence elderlies' quality of life is the role of their families. Family role is highly needed by divorced elderlies. The role of children or other family members regarding healthcare and psychological support is to help the elderlies feel that they are able to bring benefits towards their families, which would highly affect life expectancies of divorced female elderlies. Meanwhile male elderly's life expectancies are highly influenced by their ability to stay busy and productive (Cristina et al., 2014; Ha et al., 2014). Marital status is one of various factors that influence outcome of future quality of life. Life itself is brings risks of lowering quality of life. Marital status is connected with the feeling of loved, which is important for elderlies, and also a sense of helping each other both in physical and mental aspects. Problems regarding marital status highly influence the level of quality of life on elderlies (Gondodiputro, 2018).

Research data shows significant relationship between medical compliance with quality of life on elderlies with hypertension. This result is similar as other studies which revealed that the higher the level of compliance on therapeutic program, the better the quality of life of patients with hypertension (Gondodiputro et al., 2018; Pimenta et al., 2016; Alhaddad et al., 2016; Nurhidayati et al., 2018). Another study also concluded that 6 months of medical compliance in hypertension medical treatment can improve quality of life and lowering blood pressure on hypertension patients (Alhaddad et al., 2016). Regular consumption of anti-hypertension can lower blood pressure through a unique mechanism according to the consumed drug mechanical actions. Patients that regularly and precisely consume related drugs will have a better physical condition and are able to practice their daily activities better. The relationship between quality of life and medical compliance is a complex situation that would provide impacts on the ability of patients to manage their chronic illness. A research conducted by Nurhidayati et al. (2018) revealed that the compliance level of adult patients with hypertension is higher than compliance level of elderlies on drug consumption. The factors that influence medical compliance are attitude towards their illness, knowledge about their illness, and patients' life expectancies (Gondodiputro et al., 2018; Pimenta 2016; Alhaddad et al., 2016).

In the conduction of this research, we also faced several limitations on other risk factor such as economic level that might influence the ability of hypertension patients to run routine medical control and to buy anti-hypertension drugs, available healthcare access and facilities, family or health workers supports and other chronic illness that accompanying hypertension.

## CONCLUSION

This research concluded that there is a significant relationship between medical compliance and elderlies life expectancies. Besides that, there is also a significant relationship between education level and the quality of life.

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