

## Pharmaceutical Counseling Has a Positive Impact on Quality of Life of Hypertension Patients

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### Abstract

Pharmacists play a major role in educating patients regarding drug therapy, in order to achieve optimal health outcomes. The aim of this study was to investigate the effect of pharmaceutical counseling on quality of life (QoL) of hypertensive patients with renal impairment at one of public hospital in Bandung, Indonesia. This study used a prospective experimental design with pretest-posttest design for 2 months. Inclusion criteria in this study were hypertensive patients with renal impairment who received antihypertensive drugs, aged >18 years, and signed the informed consent. Exclusion criteria were patients who were not able to fill in the questionnaire, patients with end stage renal diseases, diabetes, and pregnant or lactating patients. Pharmaceutical counseling was given during 2 months of the therapy. Pharmaceutical counseling consisted of education on the appropriate use of drugs and disease management. Schedule of their own medication and leaflet containing educational information were given to the subjects. QoL was assessed using a previously validated Mini-Questionnaire of QoL in Arterial Hypertension (MINICHAL). The questionnaire consisted of 16 two dimensions questions, *i.e.*, mental health and somatic manifestation. We found that the mean increase in mental health status ( $49.5 \pm 5.3$ ) was higher than that of somatic dimension ( $32.7 \pm 3.6$ ). Both dimensions had statistically significant improvement (P value <0.05). In conclusion, pharmaceutical counseling is beneficial to improve QoL of hypertension patients.

**Keywords:** hypertension, renal impairment, quality of life

### Introduction

Hypertension is one of the leading cause of death, worldwide. It is defined as a systolic blood pressure (BP) >140 mmHg or a diastolic BP >90 mmHg.<sup>1</sup>

The prevalence of hypertension among Indonesian population is 9.5%.<sup>2</sup> Uncontrolled blood pressure could lead to impairment of several organs. Renal impairment is one of

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the complication that should be carefully monitored.<sup>3</sup>

Barriers to achieve optimal health outcome of antihypertensive therapy include non-adherence to medication and lack of awareness regarding this disease. Pharmacists play an important role in educating the patients regarding drug therapy. Counseling is one of the pharmacist intervention that is expected to improve adherence, knowledge and awareness of patients to the medication, thus improve health outcomes, including quality of life (QoL). QoL is one of the health outcome that could be used as an indicator of the adequate management of the treatment.<sup>4,5</sup>

Several instruments are available to evaluate QoL, including general and disease-related questionnaire. One of the specific questionnaire for hypertension is Mini-Questionnaire of QoL in Arterial Hypertension (MINICHAL). The changes in physical and mental health could be assessed using this instrument<sup>6,7</sup>

The aim of this study was to determine the effect of pharmacist counseling on the QoL of hypertensive patients with renal impairment.

### Methods

This study used a prospective experimental method with pretest-posttest design. Inclusion criteria in this study were hypertensive patients with renal impairment who received antihypertensive drugs, aged >18 years, and signed the informed consent. Exclusion criteria were patients who were not able to fill in the questionnaire, patients with end stage renal diseases, diabetes, and pregnant or lactating patients. This study was conducted at Dr. Hasan Sadikin General Hospital, Bandung, for 2 months period.

Pharmaceutical counseling consisted of

education on the appropriate use of drugs and disease management. Schedule of their own medication and leaflet containing educational information were given to the subjects. QoL was assessed using a previously validated Mini-Questionnaire of QoL in Arterial Hypertension (MINICHAL). The questionnaire consisted of 16 two dimensions questions, *i.e.*, mental health and somatic manifestation. The rating scale used in the questionnaire was Likert type scale with four possible answers (0-3).

For mental health dimension, the total score range from 0 (the highest level of health) to 30 (the worst level of health), while for the somatic dimension the score range from 0 (highest health level) to 18 (worst health level). In this study, the score was then transformed into a scale of 100. Statistical analysis was performed using paired t-test with  $P < 0.05$  defined statistical significance.

### Results and Discussion

This study included 24 subjects. General characteristics of the subjects can be seen in Table 1. About half (54.2%) of the subjects are male. Large proportion of the patients aged >60 years (41.7%). Education of the subjects varied, ranging from elementary school from college education (all categories were below 30%).

Table 2 illustrates the difference of QoL score, before and after pharmaceutical counseling. In general, we found that mental health score was lower than that of somatic dimensions. Both dimensions scores increased after the completion of the intervention. We found that the mean increase in mental health status ( $49.5 \pm 5.3$ ) was higher than that of somatic dimension ( $32.7 \pm 3.6$ ). Both dimensions had statistically significant improvement ( $P$  value  $< 0.05$ ).

**Table 1. Characteristics of participants**

Characteristics	n	%
Sex		
Male	13	54.2%
Female	11	45.8%
Age		
< 50	6	25.0%
50 – 59	8	33.3%
≥ 60	10	41.7%
Education		
Elementary school	5	20.8%
Secondary school	7	29.2%
High school	7	29.2%
College	5	20.8%
Occupation		
Worker	10	41.7%
Jobless	11	45.8%
Retire	3	12.5%

Pharmaceutical counseling is effective in modifying beliefs and attitude towards medication, which can result in patients behavioural changes. Such program provides the opportunity for the patients to understand their diseases and clarify misperception regarding the treatment. The elevated QoL might be resulted from improved awareness of disease and adherence to medication.<sup>8,9</sup>

QoL is a complex concept affecting physical health, psychological conditions, degree of independence, social relationships, individual beliefs and one's relationship

to the environment. Nevertheless, the assessment of QoL in hypertension patients is not straightforward since it frequently co-exist with other medical conditions, in which QoL can be negatively affected.<sup>10</sup>

Mental health is the most affected dimension among patients with hypertension. Several factors can influenced this finding. Perception of being hypertensive itself might induce pyshiological distress. Besides, the burden of treatment might worsen the mental health. Previous study showed that spirituality helped patients resolving the emotional burden of

**Table 2. QoL of participants**

QoL	Observation		P-Value
	Before counseling (%)	After counseling (%)	
Mental Health			<0.001
Mean	26.2±12.1	75.7±6.8	
Range	6.7-50	56.7-86.7	
Somatic Health			<0.001
Mean	49.5±9.9	82.2±6.1	
Range	33.3-72.2	72.2-94.4	
Total			<0,001
Mean	34.9±8.4	78.1±4.8	
Range	18.8-50	64.6-85.4	

having hypertension.<sup>11-13</sup>

Our finding is comparable with previous studies showing that pharmacist interventions could improve health-related QoL of hypertensive patients, with or without comorbidity.<sup>10,11</sup> The strength of our study was the use of specific-disease QoL instruments which could bring more sensitive results for patients with hypertension. The application of this instrument is not only for research purpose, but for clinical application. Data of this study was only obtained from one hospital in Bandung, thus generalizability of this finding is limited.

### Conclusion

Pharmaceutical counseling is beneficial to improve QoL of patients with hypertension.

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### Conflict of Interest

None declared.

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