

# Bukoini: Is There Any Correlation Between Anti-Glaucoma Eye Drop and Primary Glaucoma Patients Quality of Life in RSUD Kota Yogyakarta?

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## ABSTRACT

**Introduction.** The healthy eyes are the needs of every human being. If disorders are found in someone's eyes, their quality of life would be decreasing. One of diseases that might distract human's visual function is glaucoma. There are many factors which cause the decrease of glaucoma patient's quality of life. This research aims to discover the correlation between the numbers of anti-glaucoma eye drop kinds used by glaucoma patients with the glaucoma patients themselves. **Method.** This research is an observational-analytic research with cross sectional approach. The number of sample is 51 patients with the range of age between 20-70 years old by randomly selecting the glaucoma patients in the Eye Clinic RSUD Kota Yogyakarta. **Result.** The measurmer independent variable in this research is the number of the kind of anti-glaucoma eye drop while the dependent variable is the glaucoma patients' quality of life. The controlled confounding variables include age, non-pharmacological therapy for glaucoma, and the length of suffering glaucoma. The variables are measured by using questionnaires GQL- 15. The data are analyzed by using Spearman Rank Test. The measurement result of the correlation between the dependent variable and the independent variable by using Spearman Rank Test found that the signification value of 0,363. **Conclusion** There isn't any significant correlation between the numbers of anti-glaucoma eye drop kinds with the primary glaucoma patients in RSUD Kota Yogyakarta.

**Keywords:** *Glaucoma, Quality of life, number of anti-glaucoma eye drop kinds.*

## 1. INTRODUCTION

Healthy eyes are one of quality of life indicators. People can be said to have a good quality of life is a person who has no disruption to do all the activities. By having healthy eyes, people do not need to worry when doing any daily activities. It means that people do not experience either little or big disruption in daily activities. Thus, all people need to have healthy eyes. Healthy eyes means that your eyes are fine, there is no disease so that you can make a good use of eyes.

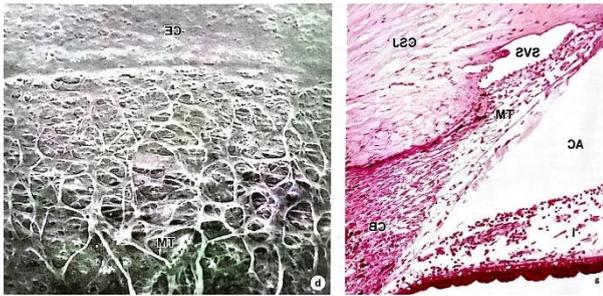
To take care of eyes, people need to know any kind of eye function disorder so that they can go to the doctor if experiencing eye function disorder symptoms. There are some types of eye function disorder which can lead to decrease a quality of life. Glaucoma is one of them.

Glaucoma is defined as a set of eye disorders with multi-factorial causes that are united by the clinical characteristics of intraocular pressure associated with optic neuropathy. Glaucoma which is progressive can eventually cause blindness [2].

Glaucoma is irreversible. This is the second leading cause of blindness worldwide including in Indonesia, after

cataracts. According to the sensory health survey in 1993-1996, from 1.5% of blindness cases experienced by the Indonesian population, the incidence of blindness that occurred due to glaucoma was 0.20%. In addition, according to data from the Basic Health Research in 2007, 0.46 % patients had been diagnosed with glaucoma by medical staff [4].

Glaucoma is a condition when a person's eye pressure is high or abnormal, resulting in damage to the optic nerve and cause interference with some or all of the eye's sight or blindness. Glaucoma occurs when eye fluid in the eyeball is discharged. In a healthy and normal eye, eye fluid will enter the eye chamber and exit through the woven trabeculum in what is called the corner of the eye chamber, which is located between the iris and the cornea [2]. As mentioned that healthy eyes can be a quality of life indicator.



Description :

- CSJ : limbus
- AC : anterior chamber
- TM : trabecular braid
- SVS : sinus venous sclera
- CE : corneal endothelium

In measuring quality of life, health worker should use both appropriate and valid instrument. There are some instruments which can be used in measuring quality of life, one of them is questionnaire. Questionnaire is a set of either question or statement about what will be measured. The questionnaire which can be used related to the research topic is both quality of life related to the eye health and glaucoma patients' quality of life.

Research on the effect of the number of anti-glaucoma eye drops on the quality of life of primary glaucoma patients is important to be made one of the considerations in providing effective pharmacological therapy for glaucoma patients. So this research can see the extent of the decline in the quality of life of patients. The aim of the research is to.

## 2. RESEARCH METHODS

This research used observational analytic with cross sectional approach. The independent variable used in this research is the number of types of anti-glaucoma eye drops given to patients while the dependent variable in this study is the quality of life of glaucoma patients.

The data were collected by using questionnaire GQL-15 to measure glaucoma patients' quality of life. Glaucoma patients at *RSUD Yogyakarta* who was treated from August to November 2018 became the sample of this study. The sampling technique used in this study was purposive sampling. Thus, the sample should meet some requirements namely aged 20-70 years, who suffer from primary glaucoma for at least 6 months and currently treating glaucoma therapy with anti-glaucoma eye drops.

There were two analyses which have been done in this study. For the first is descriptive analysis. The descriptive analysis was used to describe characteristic of patients. The second analysis was Spearman Rank Test to measure relationship between two variables.

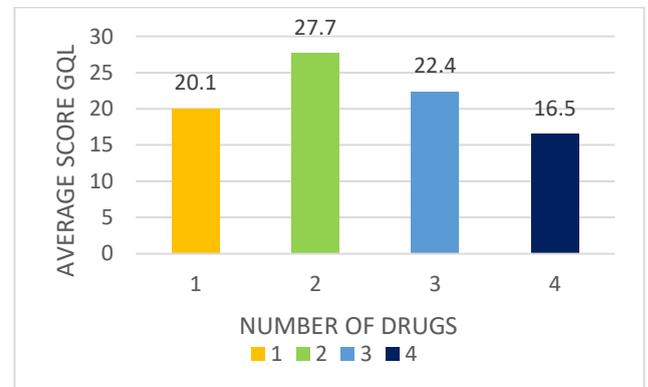
The data obtained in this research include the number of eye drops used by the patient, the distance of the patient's house to the hospital, the patient's family who accompanied them, and the type of transportation used by the patient. Patient quality of life scores were determined by GQL-15.

## 3. RESULTS AND DISCUSSION

### 3.1. Result

Here are some descriptive results of this study.

**Histogram 1.1** number of eye drops used by patients with an average quality of life for patients



**Table 4.1** Number of eye drops

Category	Frequency	%
1	37	72.5
2	7	13.7
3	5	9.8
4	2	3.9
Amount	51	100.0

**Table 4.1** shows there were 37 patients (72.5%) who used type one anti-glaucoma eye drops. It means that most of the patients used the type one. Different from type one, the fourth type was only used by 2 patients (3.9%).

**Table 4.2** Distance from the patient's house to RSUD Yogyakarta

Category	Frequency	%
Near	17	33.0
Medium	31	60.8
Far	3	5.9
Amount	51	100.0

Table 4.2 showed the distance of the patient's home to the hospital. It can be concluded that most of the patients, 31 patients (60.8%) have medium distance. It may be caused by RSUD Yogyakarta is referral hospital so that they should take more time to come to the hospital.

**Table 4.3** Transportation used by patients

Category	Frequency	%
Private Transportation	44	86.3
Public Transportation	7	13.7
Amount	51	100.0

Table 4.3 showed that more than half of patients (86.3%) come to the hospital by using private transportation.

**Table 4.4** Presence of family / relatives

Category	Frequency	%
With Family	28	54.9
Without Family	23	45.1
Amount	51	100.0

In table 4.4 shows that 28 patients (54.9%) came to the hospital with their family while the number of patients who came alone were 23 people (45.1%).

**Table 4.5** Patient age

Category	Frequency	%
20-30 years	2	3.9
31-40 years	2	3.9
41-50 years	3	5.9
51-60 years	16	31.4
61-70 years	28	54.9
Amount	51	100.0

From table 4.5 showed that most patients were aged 61-70 years as many as 28 people (54.9%).

**Table 4.6** Sex

Category	Frequency	%
Male	20	39.2
Female	31	60.8
Amount	51	100.0

Table 4.6 shows that there were 20 patients (39.2%) who were male and 31 patients or 60.8% who were female. Kolmogorov-Smirnov was used to analyze whether the data were collected from normally distributed population. The result is explained below.

**Table 4.7** Results of normality tests with the Kolmogorov-Smirnov One-Sample Test

		Total use of eye drops	Quality of life
N		51	51
Normal Parameters	Mean	1.45	21.24
	Std. Deviation	0.832	10.033
Most Extreme Differences	Absolute	0.432	0.274
	Positive	0.432	0.274
	Negative	-0.294	-0.267
Kolmogorov-Smirnov Z		3.082	1.960
Asymp. Sig. (2-tailed)		0.000	0.001

Table 4.7 shows that the data is not normally distributed. It can be seen from the p value from both variables is less than 0.05.

Spearman rank was used to measure the correlation between number of types of anti-glaucoma eye drops and

the quality of life of primary glaucoma patients with the following results:

**Table 4.8** Correlation test results between the numbers of types of anti-glaucoma eye drops with quality of life

		Total use of eye drops	Quality of life	
Spearman's rho	Total use of eye drops	Correlation Coefficient	1.000	0.130
		Sig. (2-tailed)	-	0.363
		N	51	51
	Quality of life	Correlation Coefficient	0.130	1.000
		Sig. (2-tailed)	0.363	-
		N	51	51

Table 4.8 shows that H0 is accepted. It means that there is no significant correlation between the number of anti-glaucoma eye drops and the quality of life of primary glaucoma patients. It can be seen from the sig. value 0.363.

**Table 4.9** Correlation test results between the distance of the house and the quality of life

		Total use of eye drops	Quality of life	
Spearman's rho	Distance of residence	Correlation Coefficient	1.000	-0.269
		Sig. (2-tailed)	-	0.56
		N	51	51
	Quality of Life	Correlation Coefficient	-0.269	1.000
		Sig. (2-tailed)	0.56	-
		N	51	51

In table 4.9 the significance result is 0.56 which means there is no correlation between the distance of the patient's home to the hospital with the quality of life of the patient.

**Table 4.10** Correlation test results between types of transportation and quality of life

			Total use of eye drops	Quality of life
Spearman's rho	Transportation	Correlation Coefficient	1.000	-0.148
		Sig. (2-tailed)	-	0.299
		N	51	51
	Quality of Life	Correlation Coefficient	-0.148	1.000
		Sig. (2-tailed)	0.299	-
		N	51	51

Table 4.10 shows the test results with a significance value of 0.299, which means there is no correlation between the types of transportation with the quality of life of glaucoma patients.

**Table 4.11** Correlation test results between the presences of families with quality of life

			Total use of eye drops	Quality of Life
Spearman's rho	Patient's family presence	Correlation Coefficient	1.000	-0.237
		Sig. (2-tailed)	-	0.095
		N	51	51
	Quality of Life	Correlation Coefficient	-0.237	1.000
		Sig. (2-tailed)	0.095	-
		N	51	51

From table 4.11, it can be concluded that there is no significant correlation between the presence of family or relatives and quality of life of glaucoma patients.

### 3.2. Discussion

The research conducted by Arora reported that the group of patients with glaucoma has a bad quality of life compared to the control population group. The bad quality of life is influenced by the patient's visual acuity and is related to the initiation of therapy given when the patient is first diagnosed with glaucoma.

The GQL-15 questionnaire consisted of 15 question items, each item related to the severity of the visual field narrowing. The question items are divided into four aspects of visual disability, namely: 1) Central and near vision; 2) Peripheral vision; 3) Ability to adapt in dark and glare light; and 4) outdoor mobility capabilities. Each question item will be graded on a scale of 0-5: a scale of 0 for patients who cannot perform the activity due to reasons not related to vision limitations; scale 1 for patients who do not experience significant difficulties in carrying out these activities; and a scale of 5 for patients with very severe difficulties in carrying out these activities. The score obtained from each question item is then summed with the maximum score that can be obtained from the questionnaire is 75. The higher the score obtained indicates the worse quality of life of glaucoma patients [5].

Characteristics of glaucoma patients seeking treatment at RSUD Yogyakarta were categorized by the number of eye drops given to the patient.

Hypothesis 1 stated that there is a correlation between the number of anti-glaucoma eye drops and the quality of life of primary glaucoma patients. The hypothesis in this study is that the more the number of eye drops given to the patient the worse the quality of life of the patient. However, this research shows different result, two patients using four types of anti-glaucoma eye drops have a GQL-15 score of 16 and 17 while two patients using three types of anti-glaucoma eye drops with a GQL-15 score 27 and 39. This shows that the number of types of anti-glaucoma eye drops in this study has no significant correlation with the quality of life of primary glaucoma patients.

The difference results may come from some factors. In this case, there is a difference of sample using in each eye drops. It means that each types of eye drops have different sample. In addition, there should be another variable which should be studied so that it is possible to know what factors might be related to the quality of life of glaucoma patients in RSUD Yogyakarta as well as the research conducted by Ananda [1].

Ananda, et al [1] reported that there is a correlation between knowledge and duration of illness with the quality of life of patients with glaucoma. Respondents with good knowledge tend to have a good quality of life while respondents with less knowledge also have a poor quality of life. However, there is no correlation between intraocular pressure and the quality of life of patients with glaucoma. This relates to taking intraocular pressure data which is only done once at the time of the study so that there is no relationship between intraocular pressures with quality of life for glaucoma patients.

### 4. CONCLUSION

There is no correlation between the number of anti-glaucoma eye drops and the quality of life of primary glaucoma patients in Yogyakarta City Hospital because the statistical calculation results obtained a significance value of 0.363 (> 0.05). It is different from the research which is

conducted by some scholars who stated that there is correlation between them.

The next researcher is expected to be able to conduct research with a larger sample size so that the results obtained are expected to be more accurate. In addition, if possible it would be better to use a questionnaire in which not only measure vision related quality of life, but also use a questionnaire that measures health related quality of life with more and wider measurement aspects so that the quality of life of patients can be measured more broadly and in depth. Future researchers are also expected to be able to examine not only one independent variable but to use several independent variables and examine their relationship with the quality of life of glaucoma patients as the dependent variable.

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