Original Research

The Reliability Test Of Indonesian Wearing-Off Questionnaire-19 (WOQ-19)

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ABSTRACT

Introduction: Wearing-off is a common complication that happen on Parkinson's patient with dopaminergic therapy. Identifying when wearing-off occurs is important because it can help medication and increase patient's quality of life. One of the instruments that can be used to help identifying wearing-off phenomenon is the Wearing-off Questionnaire-19 (WOQ-19). However, there is no translated version of Indonesian WOQ-19 that has been tested for its reliability.

Objective: To measure the reliability of Indonesian Wearing-off Questionnaire-19 as an instrument to identify wearing-off phenomenon on Parkinson patient.

Material and Methods: The original version of Wearing-off Questionnaire-19 translated to Indonesian language with forward-backward translation procedure and approved by the original author. This is an observational; cross sectional study carried out at Yogyakarta Bethesda Hospital. Thirty Parkinson's patients from October to December 2023 in medical records and the result of WOQ-19 Indonesian version. The reliability of the questionnaire was measured by Cronbach α and intraclass correlation coefficient.

Result and Discussion: Study conducted on 30 Parkinson's patients with mean age 70.73 ± 8.68 dominated by men 66.6% and mean duration of Parkinson's disease 5.2 years. The Indonesian WOQ-19 showed good reliability with intraclass correlation coefficient of 0.796 (IC 95%) and good internal consistency with Cronbach alpha of 0.683.

Conclusion: Indonesian WOQ-19 is reliable as an instrument that can be used to detect wearing-off phenomenon on Parkinson's patients.

Keywords: reliability; indonesian WOQ-19; parkinson's disease.

INTRODUCTION

Parkinson's disease is the second most common neurodegenerative disease after Alzheimer's. The morbidity rate of Parkinson's disease is recorded at 1-2 per 1,000 people, with the majority of cases occurring in men and the elderly. In Indonesia, there is no official data on the total number of Parkinson's patients, but it is estimated that about 1 in 272 people has Parkinson's disease.[1] Parkinson's disease occurs due to reduced dopamine concentration in the ganglia basalis which plays a role in inhibiting motor activity.[2] Motor and non-motor symptoms contribute significantly to reduced quality of life, especially in more advanced stages of the disease. One of the common complications that occurs in Parkinson's disease is the wearing-off phenomenon, which is when Parkinson's symptoms appear before the next dose.[3] Failure on identifying wearing-off can delay it's management and potentially cause complications in the development of the disease.[4]

Wearing-off Questionnaire-19 (WOQ-19) is one of the instrument that can be used to help identify wearing-off phenomenon and used in clinical practice.[5] WOQ-19 has been translated and approved for use into several languages including Spanish, Chinese, German, Italian, Japanese, Portuguese and Thai. However, no Indonesian translation has been tested for it's reliability.

MATERIAL AND METHODS

This research is an observational study with a cross-sectional design. The data used are from medical records of Parkinson's disease patients in October -December 2023 and the results of the Indonesian WOQ-19 at Neurology Clinic of the Bethesda Hospital Yogyakarta. Sampling was carried out using a purposive sampling technique of 30 subjects with inclusion criteria: (1) at least 40 years old, (2) illness duration of at least 1 year with levodopa or dopamine agonist therapy. Patients with psychiatric comorbidities and dementia (MMSE<24) were excluded from this study.

The Indonesian WOQ-19 produced through a forward and backward translation process in collaboration with linguists from the Lembaga Bahasa Universitas Sanata Dharma (Language Institute of Sanata Dharma University). An independent bilingual translator translated the original WOQ-19 into Indonesian. After modifications, the Indonesian version was translated back into English by another bilingual translator independently and blind review. The results of the back translation were then assessed by the research team and authors of the original English version of WOQ-19 and approved with adjustments. Parkinson's disease patients seeking treatment at the Bethesda Hospital neurology clinic are then asked to fill out the Indonesian WOQ-19. One month later, Parkinson's disease patients who came for control were asked to complete the Indonesian WOQ-19 again. This data is used to measure test-retest reliability.

Patient demographic data recorded were age, sex, Parkinson's disease duration, anti-Parkinsonian drugs consumed, Hoehn-Yahr stage, and patient comorbidities such as hypertension, diabetes mellitus, heart disease, and stroke. Data analysis was done using Statistical Package for Social Sciences (SPSS) version 27. The reliability of the questionnaire is evaluated by Cronbach alpha and Intraclass Correlation Coefficient (ICC).

This study was approved by the Health Research Ethics Committee of Bethesda Hospital Yogyakarta.

RESULT

Thirty patients meeting the inclusion criteria were participated in the study. The demographic data shows that the average age of the subject is 70.73 ± 8.685 years, with the majority being male (n= 20, 66.6%). Regarding the severity and progression of the disease, the most common was Hoehn and Yahr stage 3 (n= 16, 53.3%). Meanwhile, the average duration of disease since Parkinson's was first diagnosed was 5.2 ± 1.471 years (range 3-8 years).

Levodopa monotherapy (53.3%) was the most commonly used medication by the subjects. Almost all of the Parkinson's disease patients have comorbidities (96.6%).

Comorbidities in the subjects from most to least were hypertension (96.6%), diabetes mellitus (80%), stroke (63.3%), and heart disease (50%) (Table 1).

Table 1. Demographic and Clinical characteristics of subjects

Characterisctics	n=30	%
Age, Mean (years)		70,73 ± 8,685
Sex		
Male	20	66.6
Female	10	33.3
Hoehn and Yahr		
Stage 2	11	36.6
Stage 3	16	53.3
Stage 4	3	10
Duration of disease, Mean (years)		5,2 ± 1,471
Medications		
Levodopa monotherapy	16	53.3
Levodopa + dopamine agonist	3	10
Levodopa + COMT inhibitor	4	13.3
Levodopa + Trihexyphenidyl	6	20
Levodopa + COMT inhibitor + Trihexyphenidyl	1	3.3
Comorbid		
No	1	3.3
Yes	29	96.6
Hypertension		
No	1	3.3
Yes	29	96.6
Diabetes mellitus		
No	6	20
Yes	24	80
Heart disease		
No	15	50
Yes	15	50
Stroke		
No	11	36.6
Yes	19	63.3

All subjects experienced motor or non-motor symptoms with the most common symptoms being tremor (100%), slowness of movement (93.33%), and general stiffness (86.67%). The symptoms least experienced in the sample were experience sweating (0%), anxiety (6.67%), numbness (6.67%), and experience panic attacks (6.67%) (Table 2). The internal consistency of the 19-item Indonesian WOQ-19 as measured by Cronbach's alpha was acceptable at 0.683. While the intraclass correlation coefficient, when considering the number of positive items, was 0.789 (95%CI 0.614-0.897; $p<0.001$).

Table 1. The frequency of motor and non-motor symptoms

No	Symptoms	n=30	%
1.	Tremor	30	100
2.	Difficulty in speech	7	23,33
3.	Anxiety	2	6,67
4.	Experience sweating	0	0
5.	Mood changes	9	30
6.	Weakness	15	50
7.	Problems with balance	14	14,67
8.	Slowness of movement	28	93,33
9.	Reduced dexterity	18	60
10.	Numbness	2	6,67

11.	General stiffness	26	86,67
12.	Experience panic attacks	2	6,67
13.	Cloudy mind/ Dullness thinking	9	30
14.	Abdominal discomfort	17	56,67
15.	Muscle cramping	4	13,33
16.	Difficulty getting out of the chair	21	70
17.	Experience hot and cold	5	16,67
18.	Pain	6	20
19.	Aching	15	50

DISCUSSION

Currently to detect the occurrence of wearing-off, patients need to be educated first about wearing-off and asked about the symptoms they are experiencing. From the clinicians perspective sometimes it is difficult or failed to identify the occurrence of wearing-off which can lead to delays in initiating treatment. On this topic, there is patients self-assessed questionnaire WOQ-19 that recognized the Movement Disorders Society as "recommended diagnostic screening tool in PD".[6] Patients with 2-items or more positive classified as experiencing wearing-off. WOQ-19 has been adapted to various languages and it is important to ensure that the questionnaire used is culturally and linguistically relevant to get reliable results.

In this study, the Indonesian WOQ-19 showed to be reliable, with ICC of 0.796. The ICC is a measure of reliability used to assess consistency between repeated measurements. A questionnaire is considered to have good consistency if the ICC value is >0.75.[7] The Cronbach's Alpha value was 0.683 that indicates the internal consistency as fairly good and acceptable. This result is consistent with that in earlier studies, the Cronbach alpha of Vietnamese WOQ-19 was 0.778,[8] and that of Portuguese WOQ-19 is 0.815.[9] The most frequent symptoms were motor signs such as tremor, slowness of movement, and general stiffness. This result is similar to other study.[10]

This study does not involve the entire spectrum of Parkinson's patients. The spectrum included in the research consists only of Hoehn-Yahr stages 2, 3, and 4. Additionally, the analysis of sample characteristics only presents descriptive data and does not examine other variables, thus it cannot determine the relationships between variables and the disease.

CONCLUSION

The Indonesian Wearing-off Questionnaire-19 is reliable as an instrument for detecting wearing-off phenomenon in Parkinson's disease patients.

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