



# Validity and Reliability of Indonesian Version of Brief Illness Perception Questionnaire for Stroke Patients : A Pilot Study

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**Abstract.** The Brief Illness Perception Questionnaire (B-IPQ) has never been used for assessing the perception of stroke patients yet in Indonesia. The validity and reliability tests of Indonesian version of B-IPQ instrument are needed to ensure this instrument is valid, reliable, and justifiable. The objective of this research was to determine the validity and reliability of Indonesian version of B-IPQ instrument for stroke patients at RSUD Soedarso Pontianak. This research was a non-experimental study using cross-sectional approach. The B-IPQ was translated using multiple translators method. Data of 30 stroke patients were taken using purposive sampling method. Respondents involved including 3 stroke inpatients and 27 stroke outpatients. Validity test was assessed using Pearson correlation (correlation score  $\geq 0,3$ ) and reliability test was assessed using Internal consistency technique (Cronbach alpha coefficient  $\geq 0,7$ ). The results showed that the correlation score in each item of instrument was  $> 0.3$  and the Cronbach alpha coefficient of this instrument was  $0.771 (> 0.7)$ . It is concluded that Indonesian version of B-IPQ instrument is valid and reliable to assess the perception of illness for stroke patients at RSUD Soedarso Pontianak.

**Keywords:** Indonesian version of B-IPQ, Validity, Reliability, Stroke

## 1. Introduction

Somebody's perception of illness is an interpretation conducted in relation to any illness they suffer. Perception of illness contribute a lot for patients' quality of lives. Positive perception affect the improvement of patients' quality of lives, yet the negative one could kill the hope for living their lives [1].

B-IPQ is a questionnaire that used to study the illness perception of patients which intends to describe how patients deal with health threat (feeling ill). B-IPQ instrument has been used in London, UK to describe the feeling of illness threat among five different diseases such as asthma, type 2 of diabetes mellitus, myocardial, kidney, and initial diagnose of stress, it also has been passed the validity test [2].

Stroke is a cerebrovascular disease with high morbidity, mortality, and disability rates in the world [3,4]. As many as 15-30% of people with stroke experience permanent disability [5]. The length of the recovery process causes stroke patients to be discouraged. Such

despair affects the non-compliance of patients in the treatment so that there is a decrease in the quality of life of stroke patients.

Assessment of patient perception of stroke using B-IPQ instrument needs to be investigated. However, the B-IPQ instrument has not been used in Indonesia for stroke patients, especially in Pontianak. In order to be implemented in Indonesia, B-IPQ Indonesia version must first be tested for its validity and reliability.

## 2. Methodology

This research used observational method with analytical survey technique through Indonesian version of B-IPQ as the main instrument for collecting data (Figure 1).

**INSTRUMEN B-IPQ VERSI INDONESIA**  
(Thermometer v2)

### Petunjuk pengisian:

Untuk soal no. 1-8 beri kolom pada angka sesuai pilihan anda.

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Untuk soal no. 9 diisi dengan jawaban singkat dan jelas.

1. Se jauh mana penyakit Anda mempengaruhi kehidupan Anda?



**Tidak ada  
Sangat  
dampak  
berdampak**

2. Se jauh mana Anda khawatir tentang kemajuan penyakit Anda?



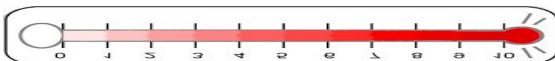
**Tidak  
Sangat  
khawatir  
khawatir  
sama sekali**

3. Se jauh mana menurut Anda, kendali yang Anda miliki atas penyakit Anda?



**Tidak punya  
Memiliki  
kendali  
kendali  
penuh**

4. Se jauh mana menurut Anda, pengobatan dapat membantu penyakit Anda?



**Sama sekali  
Sangat  
tidak  
membantu  
membantu**

5. Seberapa banyak Anda mengalami gejala dari penyakit Anda?



**Tidak ada  
Banyak gejala  
gejala  
parah**

6. Seberapa khawatir Anda terhadap penyakit Anda?



**Tidak khawatir  
Sangat  
sama sekali  
khawatir**

7. Se jauh mana Anda memahami penyakit Anda?



**Tidak paham  
Memahami  
sama sekali  
dengan jelas**

8. Seberapa jauh penyakit Anda mempengaruhi Anda secara emosional? (misalnya marah, takut, kecewa atau tertekan?)



**Tidak ada  
Sangat  
dampak  
berdampak  
emosional  
scr emosional**

9. Sebutkan tiga faktor yang paling penting yang Anda yakini menyebabkan penyakit Anda :

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

Figure 1. Indonesian Version of B-IPQ

Indonesian version of B-IPQ had been translated with multiple translators method by two translators to avoid any language peculiarity or tendency of using personal preferences language style by single translator [6]. Cross sectional approach was used in this research. The data population for this research were stroke patients who underwent treatment at RSUD Soedarso, Pontianak. The samples were stroke patients at RSUD Soedarso, Pontianak who meet the inclusion criteria. The inclusion criteria of this study was patient with a history of stroke ; age above 18 y.o. ; inpatient and outpatient at RSUD Soedarso, Pontianak ; able to read and understand the Indonesian version of B-IPQ instrument ; and willing to participate in the research.

The ethical test permission of this research (No. 534/UN22.9/DT/2017) had been released by Ethical Review Division, Faculty of Medicine, University of Tanjungpura according to current procedure. Data collection was conducted by giving questionnaires to stroke patients who underwent treatment at RSUD Soedarso Pontianak. All samples that met the inclusion criteria were chosen by nonprobability sampling technique with purposive sampling technique. The total sample of stroke patients were 30 respondents which included 27 outpatients and 3 inpatients. Data of patient's characteristic were analyzed descriptively in table form as percentage. Validity test was done through Pearson correlation method (correlation value = 0,3) while reliability test using Internal consistency technique (Cronbach alpha coefficient = 0,7) [7].

### 3. Result

Data on the distribution of stroke patient characteristics in RSUD Soedarso Pontianak are depicted in Table 1.

Based on Table 1, the respondents are dominated by outpatient category (90%), male (66.67%), 55-64 years of age (40%), high school education graduate (43.33%), duration of suffering the illness for 0-1 years (53.33%), and have comorbid disease (100%).

**Table 1.** Distribution of Patients Characteristics

Characteristics	Category	N=30	
		Amount	%
Patient Category	Inpatient	3	10
	Outpatient	27	90
Gender	Male	20	66.67
	Female	10	33.33
Age (y.o.)	45-54	10	33.33
	55-64	12	40
	65-74	7	23.33
	>75	1	3.34
Education Level	Elementary	8	26.67
	Junior High	4	13.33
	Senior High	13	43.33
	Diploma	2	6.67
	Bachelor	3	10
	Duration of Stroke Suffering (years)	0-1	16
2-5	11	36.67	
6-10	3	10	
>10	0	0	
Comorbidity	No	30	100
	Yes	0	0

The results of eight question items of validity test in Indonesian version of B-IPQ instrument have correlation value > 0.3. Hence, it can be stated that each question

item of B-IPQ instrument of Indonesian version is valid (see Table 2).

**Table 2.** Validity Test Result

Question Items	Correlation	Limit Value	Conclusion
X1	0.675	0.3	Valid
X2	0.882	0.3	Valid
X3	0.448	0.3	Valid
X4	0.319	0.3	Valid
X5	0.708	0.3	Valid
X6	0.843	0.3	Valid
X7	0.358	0.3	Valid
X8	0.540	0.3	Valid

The reliability test results show that Cronbach alpha coefficient value is 0.771. This value is greater than 0.7

and it can be concluded that 8 question items of B-IPQ instrument of Indonesia version is reliable (see Table 3).

**Table 3.** Reliability Test Result

Cronbach's Alpha	Items Number
0.771	8

Assessment of the Indonesian version of B-IPQ instrument aimed to assess each item adjusted to each

item's question and the overall assessment of the total score of all items (see Table 4).

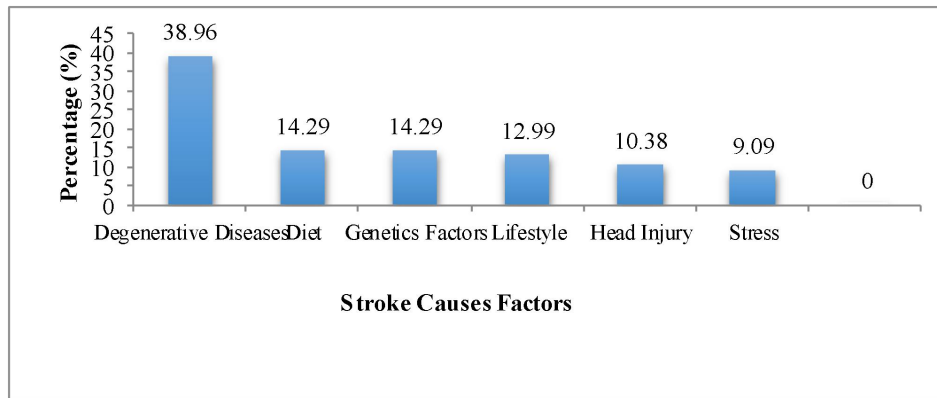
**Table 4.** Average Value of Item Number 1 to 8 Indonesian Version of B-IPQ

Patient Category	Question Number Item								Total Score
	1	2	3	4	5	6	7	8	
Inpatient	8.67	9	5.33	8.33	8.33	9	8	8.33	65
Outpatient	6.56	5.33	6.26	6.93	4.74	5.56	7.33	6.44	49.11
Overall	<b>7.61</b>	<b>7.15</b>	<b>5.80</b>	<b>7.63</b>	<b>6.54</b>	<b>7.28</b>	<b>7.67</b>	<b>7.39</b>	<b>57.06</b>

The comparison of the total scores from both categories of patients showed that the illness perception between inpatients and outpatients were above 40 with a total hospitalization score of 65 for inpatients higher than for outpatients (49.11). The overall assessment was measured by calculating the total score of the eight question items. According to Table 4, the total score of all eight items as a whole is 57.06 which means that stroke is still considered as a threat.

patient to mention three main factors causing the onset of stroke. There were total of 90 answers responsible for the occurrence of stroke given by 30 respondents. Some answers which falling into the same category would be counted as one answer so that the total number of responses were grouped into 6 causal categories including degenerative diseases (38.96%), diet (14.29%), genetic factors (14.29%), lifestyle (12.99%), head injury (10.38%), and stress (9.09%).

The results of the ninth item of B-IPQ Indonesia version is displayed in Figure 2. Question of item 9 requires the



**Fig 2.** Chart of Item Number 9 Result of Indonesian Version of B-IPQ

## 4. Discussion

### 4.1 Patients Characteristics

Respondents were dominated by outpatients because of the greater number and the more likely patient conditions for data to be taken. Small number of inpatients and feared disruption of patient comfort associated with the patient's physical and emotional conditions are the reasons that data collecting in this category is not possible to conduct. The results showed that stroke was suffered by many men because women are more protected from heart disease and stroke until the middle age of their lives due to estrogen hormone they have. However, after menopause the risk for women is similar to men of stroke and heart disease [8]. Based on this study most patients are in the age category 55-64 y.o. This is because the blood vessels of older people tend to undergo degenerative changes and start the process of

atherosclerosis which is the factor of the occurrence of stroke.

Respondents with lower levels of education such as junior high and elementary school graduation are fewer than the proportion of high school graduates. This might be due to the economic status of people with low education who are unable to reach health services, so few of the lower education classes receive health services. The level of education is not directly related to the incidence of stroke. However, the education level of a person determines the person's attitude toward healthy behavior [9]. The large number of patients with a relatively recent history of stroke (0-1 years) indicates that there is a high awareness of the community to perform stroke treatment as early as possible. Based on presence or absence of comorbidities, all stroke patients have comorbidities, including hypertension, heart disease, diabetes mellitus, hypercholesterolemia, and uric acid. The most comorbidity the patient has is hypertension by 20 respondents. One of cause of

degenerative diseases to ischemic stroke is the existence of an atherosclerosis process [10].

#### 4.2 Validity Test and Reliability Test

The eight items questions of B-IPQ Indonesian version are valid which mean they could be understood by stroke patients. Indonesian version of B-IPQ instruments could be used to assess the illness perception of Stroke patients. Løchting et al. (2013) said that these instruments have been translated into several languages and applied cross-nationally, thus it could be said that these instruments have been met whole aspects to describe the perception of illness from a patient and of course they could be understood by patients easily.

Reliability test result of B-IPQ Indonesian version instruments of stroke patients is declared reliable and could be used to assess perception of illness of stroke patients. This statement is clarified by the study of Løchting et al (Lochting, 2013). which mentioned these instruments have been translated into several languages and applied cross-nationally, thus the instruments have been met all the aspects to describe the perception of illness from a patient and could be use anywhere.

#### 4.3 Instrument Assessment of Indonesian Version of B-IPQ

Inpatients have perception of illness toward the negative rather than the outpatients. This might be because the inpatients condition were worse and suffer more symptoms of their illness so that they felt worry about the stroke development they suffer. Overall assessment shows that stroke as a threat. According to the research of Løchting, et al. (2013) the higher score showed that the illness was more likely considered as a threat [11].

The three main factors that most believed to be the main cause of stroke patients are degenerative disease (38,96%), diet (14,29%) and genetic factor (14,29%). Generally the factors that can be changed such as degenerative diseases, lifestyle, diet, and physical injury, while the factors that cannot be avoided such as genetic factors [12]. One of cause for degenerative diseases to ischemic stroke such as existence of an atherosclerosis process.

Stroke patients who attended RSUD Soedarso Pontianak have negative perception related to the disease they suffered. This indirectly affects the outcome of the therapy being undertaken. Non-compliance becomes one of the obstacles in achieving successful treatment especially in chronic diseases, such as stroke. The longer the patient has the disease, the less obedient they act toward the treatment [13]. Increased perception impacts the patient's compliance in the treatment so that their

quality of lives become much better. Therefore the role of health workers, especially pharmacists are required to be able to change the patient's perception to becomes more positive.

One of the interventions that can be done by pharmacists to improve adherence in the therapy of stroke is counseling. Counseling is aims to improve the patient's understanding about the importance of medication role in the treatment of illnesses they suffered [14]. Thus, appropriate knowledge can change the patient's perceptions and attitudes more positively, therefore improving the patient's behavior in stroke therapy. Hopefully the understanding of the patient's perception toward stroke can help improve the quality of service and motivate the patients to overcome the illness and give behavior change in the purpose of medicine adherence.

The lacks of this study is the limited number of inpatients at the time of sampling, making it more dominated by outpatients. In addition, lack of literature such as B-IPQ research in Indonesia, especially in the field of pharmaceuticals. Despite these limitations, this research could still contribute alternative ways for patients to lead their perception toward the illness to become more positive. Positive perception could slow the spread of illness therefore the quality life of patients could be improved.

#### 4. Conclusion

Indonesian version of B-IPQ is valid and reliable to measure the illness perception of stroke patients at RSUD Soedarso, Pontianak.

#### References

- [1] J, Chilcot, Studies of Depression And Illness Representations in End-Stage Renal Disease. Master Thesis. University of Hertfordshire, UK (2010).
- [2] E. Broadbent, *et al*, The Brief Illness Perception Questionnaire. *Journal of Psychosomatic Research*, 2006; 631-37.
- [3] Harsono, *Kapita Selekt Neurologi, 2th Edition*. Yogyakarta: Gajah Mada University Press (2005).
- [4] V. L. Roger, *et al*, Heart Disease And Stroke Statistics 2012 Update: a Report from The American Heart Association. *American Heart Association*, 125 (2012)..
- [5] A. K. Saenger, and R. H. Christenson, Stroke Biomarkers: Progress And Challenges for Diagnosis, Prognosis, Differentiation, And Treatment. *Clinical Chemistry*, 56 (1), 21-33 (2010).

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- [6] R. Hambleton, P. Merenda, and C. Spielberger, *Adapting Educational and Psychological Tests for Cross-Cultural Assessment*. New Jersey (2005).
- [7] D. Priyatno, *Understand the Data Statistic Analysis Using SPSS*. Yogyakarta: Mediakom (2010).
- [8] Heart and Stroke Foundation, *A Perfect Storm of Heart Disease Looming on Our Horizon* (2010).
- [9] S. Notoatmodjo, *Health Promotion and Behavior Science*. Jakarta: Rineka Cipta (2007).
- [10] L. Ryden., *et al*, Guideline on Diabetes, Prediabetes, And Cardiovasculer Disease. *Eur Heart J.*, **28** (1), 88-136 (2007).
- [11] L. Løchting, *et al*, Evaluation of the Brief Illness Perception Questionnaire in Sub-Acute And Chronic Low Back Pain Patients: Data Quality, Reliability And Validity. *J Pain Reli*, **2** (3) (2013).