Validation of the Indonesian version of psychotic symptom rating scale (Ina-PSYRATS) hallucination subscale

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Abstract. The Psychotic Symptom Rating Scales (PSYRATS) is the most widely used validated scale to measure the specific symptoms of auditory hallucinations and delusions. The purpose of this study was to validate and examine the psychometric properties of the auditory hallucination component of the Indonesian-PSYRATS (Ina-PSYRATS). The study was performed in the outpatient clinic of the Department of Psychiatry, Dr. Cipto Mangunkusumo Hospital, with 50 schizophrenia patients who had experienced or reported verbal auditory hallucinations. We conducted translation and back-translation, panel test, pilot test, and validation test. The psychometric properties of Ina-PSYRATS were studied and a comparison was made between the PSYRATS and the Positive and Negative Syndrome Scale (PANSS). The internal validity was good (95%). The internal consistency of InaPSYRATS was good, as revealed by Cronbach’s alpha value (0.90). Factor analysis replicated three components consisting of emotional, cognitive, and physical factors, similar to the factorial structure of the original auditory hallucination scale. Spearman’s rank-order correlation showed a significant positive relationship between the total auditory hallucination score and PANSS auditory hallucination item (P3). The auditory hallucination domain of Ina-PSYRATS is a reliable and valid assessment tool suitable for clinical applications.

1. Introduction

In schizophrenia, hallucinations can occur in five senses: auditory, visual, tactile, olfactory, and gustatory [1]. However, the most commonly reported type is auditory hallucinations (AH), specifically ‘hearing voices’. Auditory hallucinatory symptoms occur in 50%–80% of schizophrenic disorder patients [2] and play an important role in morbidity and daily social functioning. Auditory hallucinations are commonly found in paranoid subtypes of schizophrenia and are related to cognitive decline [3]. Moreover, auditory hallucinations are reported to be a trigger for suicide. Despite modern development in antipsychotic drugs, 40-50% of schizophrenia patients still experience auditory hallucinations [1-3].

Hallucinations are thought to derive from impaired metacognitive process functions assigned to discriminate between outside and inside sources [4,5], as well as an information processing deficit [6]. At present, there are several well-structured instruments that can be used to quantify different dimensions of hallucinatory experience, such as the Psychotic Symptom Rating Scale (PSYRATS) [7] and the auditory hallucinations item in The Positive and Negative Syndrome Scale (PANSS) [8].

The Psychotic Symptom Rating Scale (PSYRATS) is a psychometrically validated multidimensional questionnaire used to assess the severity of auditory hallucinations and delusions.
developed by Haddock [7]. PSYRATS’s superiority compared to other psychometric scales lies in its ability to assess in detail the characteristics of hallucinations and delusions [9]. It is a semi-structured interview that is easy to administer and consists of two main domains of auditory hallucination and intelligence. These domains can be used alone or simultaneously in psychotic patients. PSYRATS is known to have a high degree of validity and reliability, and it has been successfully translated to several languages [9]. However, PSYRATS has never been translated into or validated in Indonesian. Standardization and validation of PSYRATS in Bahasa Indonesian will minimize biases arising from misinterpretation by the rater or patient due to differences in language and cultural backgrounds. Therefore, the purpose of this study was to translate and validate the hallucinations domain from the original PSYRATS to the Indonesian language.

2. Materials and Methods
A validation and reliability test was done on the Ina-PSYRATS. The data were analyzed using descriptive and inferential statistics. This study was approved by Faculty of Medicine Universitas Indonesia (FMUI) ethics committee.

2.1 Participants
This validation study was performed at the outpatient clinic of the Department of Psychiatry, Cipto Mangunkusumo National Referral Hospital, among 50 schizophrenia patients with a history of verbal auditory hallucination. Of these patients, 25 (50%) were males and 25 (50%) were females. Their mean age was 38.76 (SD=10.43) and the mean duration of illness was 10.2 years (SD = 6.74). Only patients who experienced auditory hallucinations within one week prior to administration of PSYRATS were included in the study. Patients were assessed using hallucination scale and the PANSS (P3) hallucination item. The diagnosis of schizophrenia was made in accordance to the ICD-10 of mental disorders and was confirmed using a MINI structured interview. All patients were taking first or second generation anti-psychotic medications.

2.2 Materials
2.2.1 Psychotic symptom rating scale (PSYRATS)
The Psychotic Symptom Rating Scale (PSYRATS), compiled by Haddock [7] from the University of Manchester, is a semi-structured interview designed to assess the subjective characteristics of hallucinations and ideology. The auditory hallucinations scale consist of 11 items: frequency, duration, control ability, sound, location, severity and intensity of distress, number and degree of negative content, belief of voice source, and disruption in life. The subscales consists of six items, namely duration and frequency of preoccupation, distress intensity, amount of content, confidence, and disruption. This scale has excellent inter-rater reliability and good validity in people with schizophrenia. The hallucinations and wisdom items are measured on a 5-point ordinal scale.

2.2.2 Positive and negative syndrome scale (PANSS)
The PANSS is a rating instrument to assess symptoms associated with schizophrenia. In this study, only the hallucination component (P3) was used.
Mini-international neuropsychiatric interview (MINI). The MINI is a structured clinical interview widely used by researchers to diagnose psychiatric disorders in accordance with the ICD-10. MINI was used to confirm the diagnosis of schizophrenia in this research.

2.2.3 Translation and validity
We conducted translation and back-translation, a panel test, pilot test and validation test. The psychometric properties of Ina-PSYRATS were studied and a comparison was made between the PSYRATS and PANSS.
2.2.4 Statistical analysis
Statistical analysis was conducted using SPSS software version 21. The factor structure of the scales was evaluated by principal component factor analysis with a varimax rotation with Kaiser normalization. The association between the total PSYRATS and PANSS scores were examined using the Spearman rank-based correlation test.

3. Results and Discussion
3.1 Results
Fifty schizophrenia subjects were assessed. The internal validity was good (95%). The internal consistency of Ina-PSYRATS was good, as revealed by Cronbach’s alpha value (0.90). Factor analysis replicated three components consisting of emotional, cognitive, and physical factors, similar to the factorial structure of the original auditory hallucination scale. As shown in Table 1, there was a significant positive relationship between auditory hallucination scores and PANSSS auditory hallucination item (P3).

Table 1. Correlation between items of the PSYRATS hallucination scale and the PANSS P2 hallucination item.

| PANSS P3 Hallucination (n=50)       |       |
|------------------------------------|-------|
| Frequency                          | 0.765*|
| Duration                           | 0.344*|
| Location                           | 0.419*|
| Loudness                           | 0.354*|
| Origin of voice                    | 0.373*|
| Amount of negative content         | 0.455*|
| Degree of negative content         | 0.151 |
| Amount of distress                 | 0.346*|
| Intensity of distress              | 0.371*|
| Disruption to life                 | 0.687*|
| Controllability                    | 0.455*|
| Total AH                           |       |

* p<0.05 (2-tailed)

3.2 Discussion
In addition to validating the Inda-PSYRATS, our findings replicate the work of Steel et al. [10], Favrod et al. [11], and S. Wahab et al. [9] who found significant correlation between the total auditory hallucination score of Ina-PSYRATS and the hallucination item (P3) of the PANSS. Our factor analysis also replicated the structure of the original PSYRATS, finding a three-factor solution: emotional, physical, and cognitive.

Limitations of this study include the small sample size and data collection from only one tertiary hospital in an urban area. Despite these limitations, this study supports that Ina-PSYRATS is suitable for clinical use.

4. Conclusion
The auditory hallucination domain of Ina-PSYRATS is a reliable and valid assessment tool for further clinical applications.
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