

Reliability and Validity of the Indonesian Version of Overt Agitation Severity Scale (OASS) among Agitated Emergency Psychiatric Patients

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Abstract

The aim of this study was examining the reliability and validity of the Indonesian version of Overt Agitation Severity Scale (OASS) in assessing the severity of agitation. We translated the original OASS to the Indonesian version. Then, we investigated the internal consistency, inter-rater reliability and the validity of the Indonesian version of the OASS. In the validity study, we compared the OASS Indonesian version with PANSS-EC. In the reliability study, Cronbach's alpha was 0.76; the inter-rater reliability of the OASS Indonesian version showed a Spearman's rho of 0.711 - 1. In the validation study, the Indonesian version of OASS score correlated with the PANSS-EC scores, Spearman's rho 0.951. The study indicates that the Indonesian version of OASS is a reliable and valid instrument to test agitation.

Keywords: Agitation, Aggression, Psychiatric Rating Scale

1. Introduction

Challenging or disturbed behavior is very common in psychiatry emergency unit. Such behavior imposes enormous burdens on the patients' families and professional health practitioner. (Knox & Holloman Jr, 2012) Agitation is a highly disabling behavior, is one of the most distressing aspects of mental disorders, and is a main cause of institutionalisation. (Ng, Zeller, & Rhoades, 2010)

As agitation is an outcome variable in many randomised pharmacological and non-pharmacological controlled intervention studies, instruments that measure agitation have to be feasible, reliable and valid. (Cohen-Mansfield, Assessment of Disruptive Behavior/Agitation in the Elderly: Function, Methods, and Difficulties., 1995) Many instruments have emerged, measuring aggressive (Patel & Hope, 1992; Silver & Yudofsky, 1991; Hope & Fairburn, 1992) and agitated (Cohen-Mansfield, Marx, & Rosenthal, A Description of Agitation in a Nursing Home, 1989; Finkel, Lyons, & Anderson, 1993; Cummings, Mega, Gray, RosenbergThompson, Carusi, & Gornbein, 1994) behaviors in different patient populations and in a variety of settings. One of the most popular rating scale and has been translated into Indonesian version is The Positive and Negative Symptoms Scale Excited Component (PANSS-EC). (Montoya, Valladares, Lizan, San, Escobar, & Paz, 2011) In research, especially in Indonesia The Positive and Negative Symptoms Scale Excited Component (PANSS-EC) is often applied.

In routine clinical use, the PANSS-EC may be too large and time consuming. Aside from its application, the PANSS-EC do not distinguish aggression from agitation. Therefore it is not suitable to rate agitation with PANSS-EC.

Yudofsky et al. developed Overt Agitation Severity Scale (OASS) (Yudofsky, Kopecky, Kunik, Silver, & Endicott, 1997) based on objective definition of agitation. Yudofsky et al. define agitation as a group of signs that are characterized with motoric and verbal hyper-activation. OASS is an observational scale and allows clinician to assess the level of agitation in a patient quickly. OASS clearly measure physically-and-verbally-agitated and verbally-and-physically-non-aggressive behavior. OASS demonstrated good psychometric properties in the original English version, but the Indonesian version has not been available yet.

The aim of this study was to gain and assess the reliability and validity of the Indonesian version of the OASS.

2. Methods

2.1. The Instruments

The OASS is an instrument intended for the measurement of agitation in in-patient and out-patients setting. Agitation is measured by measuring amount of muscles group movements. The muscles groups are oral/facial, trunk and upper extremity, and lower extremity. Original authors showed the internal consistency was 0,88-0,91, test-retest reliability 0,91-0,91, inter-rater r: 0,90 (p: <0,01. Construct validity was r= 0,81 (p:<0,01) and

discriminant validity was $r = 0,28$ ($p < 0,01$). (Yudofsky, Kopecky, Kunik, Silver, & Endicott, 1997)

The PANSS-EC consists of 5 items: excitement, tension, hostility, uncooperativeness, and poor impulse control. The 5 items from the PANSS-EC are rated from 1 (not present) to 7 (extremely severe); scores range from 5 to 35; mean scores ≥ 20 clinically correspond to severe agitation. (Montoya, Valladares, Lizan, San, Escobar, & Paz, 2011; Kay, Fiszbein, & Opler, 1987)

2.2. Translation Process

The OASS was translated from English to Indonesian version according to Translation and Culture Adaptation Group (TCA Group) translation protocol. (Wild, et al., 2005) This protocol uses forward and backward translation model. For the forward translation purpose, GW and ES were qualified for forward translators. While MM and DS were qualified for backward translators. All the translation process conducted through email. The two forward and backward translation products were then presented to discussion panel which presented by experienced psychiatrists (BL and VC) and experienced linguist (MM). All the panelists then determined the best Indonesian version that showed closest translation to the original OASS.

2.3. Participants

The scales were administered to a convenience sample of 22 agitated and non-aggressed consecutive emergency psychiatric patients from November to December 2013. The inclusion criteria were patients aged 18-60 years and exhibit agitated. The exclusion criteria were in sedation pharmacotherapy and refuse to be participant in this study.

2.4. Data collection

This study was conducted in emergency room Sumatera Utara Mental Hospital in Medan, Indonesia. First and third author (PJS and VC) administered the OASS. The comparator was the PANSS-EC which was administered by PANSS certified senior resident (FLS). Every eligible patient was secluded and unrestrained in rectangular 16 squared meters room. Two sides of the room have 1 window each and 1 latticed metal door in one side. Each Rater observed and rated the patient from different angle in the same time.

2.5. Data analysis

All the statistical analyses were performed using SPSS version 15.0. Cronbach's α coefficient was used to determine internal consistency. Inter-rater reliability was conducted using intra-class correlation coefficient statistical methods. For assessing validity, Spearman correlation coefficient was used. (Dahlan, 2009)

2.6. Ethical clearance and Permission

The original author of OASS had gave permission for translating OASS to Indonesian version. The Research Ethics Committee of University of Sumatera Utara reviewed and provided ethical approval for the study.

3. Results

3.1. Translation

The translation protocol succeeded translate OASS original version to Indonesian version. The Indonesian version of OASS is shown on figure 1.

3.2. Reliability and validity

A total of 22 patients participated in the study. The mean age of the patients was 33 years (SD 7.9). Baseline characteristics are shown in table 1. The mean OASS score for rater 1 (PJS) and rater 2 (VC) were $55,41 \pm 21,016$ and $56,14 \pm 21,925$, respectively. The mean PANSS-EC score was $22,95 \pm 6,122$.

Internal consistency was evaluated on 22 agitated psychiatric patients from the validity study. Cronbach's coefficient α was 0.76, revealing a high level of internal consistency. Inter-rater reliability between two psychiatrists, who rated the study participants, was determined by calculating the intra-class correlation coefficient. The results revealed high reliability kappa coefficient, it varied between 0.711 and 1. The correlation coefficients between two raters in all 12 domains were significant (Table 2).

Discriminant validity was evaluated by using spearman correlation statistics to compare the scores between OASS Indonesian version score and PANSS-EC score. (Figure 2. and Table 3.) Spearman's correlation coefficients between the PANSS-EC and the OASS scales were $r = 0.951$ ($p = 0.001$). For the items of excitement, tension, hostility, uncooperativeness, and poor impulse control, the correlation were significant between PANSS-EC and OASS ($P = 0.001$), and the r range from 0,767 – 0,911.

4. Discussion

A good translation process, with the goal of a knowledge transfer to the target language, it should be noticed that

not only the elements of language that have to be prioritized, but also cultural elements. Adoption of culture element in the process of translation makes the result of translation is valid for users. A side from the forward and backward translation method, four translators who fulfilled the TCA requirement made the OASS Indonesian version is valid. (Wild, et al., 2005; Greco, Walop, & Eastridge, 1987)

Agitation is a poorly defined entity in the mosaic of the neuropsychiatric symptoms/syndroms, although many have investigated and tried to define it. (Kopecky & Yudofsky, 1999; Lindenmayer, Cwoner, & Cosgrove, 2002) Therefore, we find quite a number of different scales and are confronted with the fact that many studies are difficult to compare because the results are dependent on which scale has been used. The aim of this study was the evaluation of the psychometric properties of the Indonesian version of OASS as an instrument for neuropsychiatric symptoms of individuals with agitation.

Our study showed that internal consistency, inter-rater reliability, and criterion validity of the OASS are all acceptable, with the values being somewhere between moderate to excellent. The validity of most behavioral domains (excitement, tension, hostility, uncooperativeness, and poor impulse control) showed satisfactory results when compared with PANSS-EC. The results of this study also revealed that the OASS is able to discriminate agitation from aggression, and therefore can be used in clinical studies to quantify behavioral changes in agitation. The validation result of this study did not differ from the original version OASS. (Yudofsky, Kopecky, Kunik, Silver, & Endicott, 1997)

5. Limitation

This study has limitations. First, the subjects were only from emergency unit and mental disorder only. Agitation is not found only in mental disorder diagnoses, but also from other discipline. Agitation is common in in-patients, out-patients, and emergency unit services. Second, all the raters were psychiatrist. For further research, it is good to involve other health practitioner such as neurologist, general practitioner, and nurse as rater.

6. Conclusion

The study indicates that the Indonesian version of OASS is a reliable and valid instrument to test agitation in emergency psychiatric unit. The OASS is easy and quick to apply in an institutional setting and may therefore contribute to improving the quality of the services provided. There is a need for further investigation of the reliability and validity of the Indonesian version of OASS in other psychiatric setting and other discipline, to find out more about the generalisability of our results.

7. Acknowledgements

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8. Author Contribution

Conceived and designed the experiments: PJS, BL, VC, FLS. Translator: GW, ES, MM, DS. Analyzed the data: PJS. Wrote the paper: PJS.

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Nama Pasien : Waktu :
 Usia : Tahun (L / P)
 Berat Badan :

Intensitas (I)	Perilaku	Frekuensi (F)					Skor Keparahan (SK) (IxF=SK)
		Tidak Ada	Jarang/ sesekali	Kadang	Sering/ hampir selalu	Selalu Ada	
A. Vokalisasi dan Gerakan Otot Wajah							
1	Merintih, mengerang, menggerutu, mendengus, menangis Pengeluaran suara yang tidak keras dan tanpa arti/artikulasi yang jelas	0	1	2	3	4	=
2	Menjilat-jilat bibir, mengunyah-ngunyah, Mengeraskan rahang, menjilat-jilat, meludah	0	1	2	3	4	=
3	Mengangguk-anggukkan, Menggeleng-gelengkan, Membenturkan kepala	0	1	2	3	4	=
4	Banyak bicara, Berteriak, Mengutuk, Mengancam, Menangis degan suara keras	0	1	2	3	4	=
B. Gerakan Badan dan Anggota Gerak Bagian Atas							
1	Mengetuk-ngetuk jari, menggerak-gerakkan tangan/lengan secara terus menerus, Mengepalkan Tangan, Mengayun-ayunkan tangan	0	1	2	3	4	=
2	Banyak bergerak/tidak mau diam seperti cacing kepanasan	0	1	2	3	4	=
3	Menggerakkan badan ke depan dan ke belakang, Membungkuk dan menegakkan badan kembali, menggosok-gosokkan badan atau masturbasi	0	1	2	3	4	=
4	Memukul dengan tangan/lengan sesuatu objek atau menabrakkan badan pada sesuatu objek	0	1	2	3	4	=
C. Gerakan Anggota Gerak Bagian Bawah							
1	Mengetuk-ngetuk ibu jari kaki, Mengepalkan jari-jari kaki, Mengetuk-ngetukkan tumit, meluruskan dan melipat kaki, atau memutar-mutar kaki	0	1	2	3	4	=
2	Menggoyang-goyangkan paha atau betis, mengetuk-ketukkan lutur/paha, menggoyang-goyangkan panggul, menghentakkan kaki	0	1	2	3	4	=
3	Berjalan mondar-mandir, berjalan berputar-putar	0	1	2	3	4	=
4	Menendang sesuatu objek atau lainnya	0	1	2	3	4	=
TOTAL OASS							
Dikurangi OASS tanpa agitasi							
OASS Revisi							

Figure 1. Indonesian version of OASS

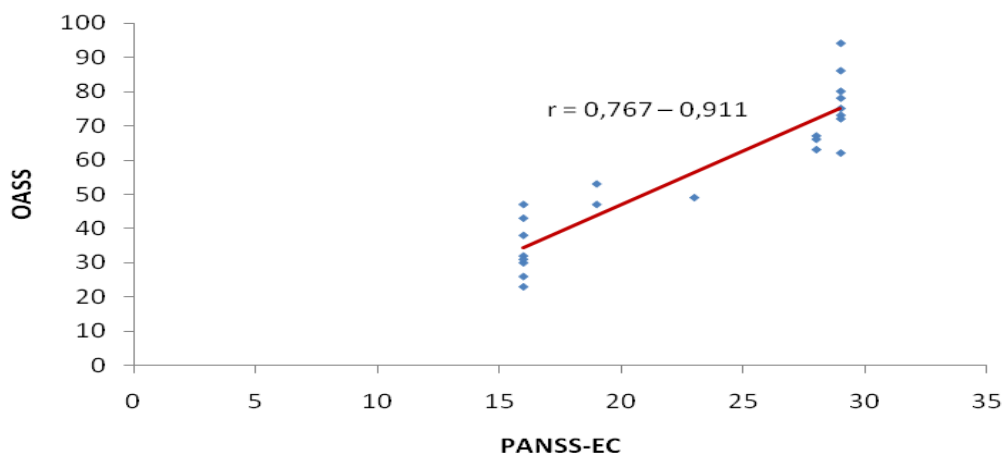


Figure 2. Spearman Correlation Scatter Plot Between the PANSS-EC and the OASS

Table 1. Baseline Characteristic

CHARACTERISTIC	SAMPLE(N)	MEAN/ PROPORTION	STANDART DEVIATION
Age	22	33	7,99
Gender			
Male	11	50%	
Female	11	50%	
Level of Education			
None	1	4,55%	
Primary School	4	18,18%	
Junior High School	6	27,27%	
Senior High School	9	40,91%	
Graduate	2	9,1%	
Marital Status			
Married	11	50%	
Single	11	50%	
Diagnose			
Bipolar Disorder	1	4,55%	
Psychotic Acute	4	18,17%	
Schizophrenia	17	77,28%	

Table 2. Inter-rater reliability

Domain	Kappa Coefficient
A1	0,724
A2	0,711
A3	0,735
A4	0,750
B1	0,759
B2	0,891
B3	0,807
B4	1,000
C1	0,760
C2	0,756
C3	0,711
C4	1,000

Table 3. Discriminant Validity

Items on PANSS-EC	r	p
Total PANSS-EC score	0,951	0,001*
Excitement	0,911	0,001*
Tension	0,879	0,001*
Hostility	0,885	0,001*
Uncooperativeness	0,911	0,001*
Poor impulse control	0,767	0,001*

*) Spearman Correlation