

EDUCATION SECTION

MODEL ANSWER FOR CRITICAL REVIEW PAPER: CONJOINT EXAMINATION FOR MALAYSIAN MASTER OF MEDICINE (PSYCHIATRY) AND MASTER OF PSYCHOLOGICAL MEDICINE (MPM), NOVEMBER 2009

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Abstract

Critical review paper is one of the components in the theory examination for master of medicine (psychiatry) and master of psychological medicine part II. Majority of the students find critical review paper is difficult to pass. Thus this article is useful to help them. The paper discussed below is aimed to determine the validity and examine the reliability of the Malay version of Auditory Verbal Learning Test (MVAULT) for Malaysian population use. They also wanted to determine the level of performance of the test among schizophrenia patients. The data were subjected to the principal component factor analysis (PCA) with varimax rotation using a single factor. Questions for this paper mainly discussed the validity and factor analysis concept. *ASEAN Journal of Psychiatry, Vol.11(1): Jan – June 2010: XX XX.*

CRITICAL REVIEW PAPER: CONJOINT EXAMINATION FOR MASTER OF MEDICINE (PSYCHIATRY) AND MPM, NOVEMBER 2009.

Title of paper: Validation of the Malay version of Auditory Verbal Learning Test (MVAULT) among Schizophrenia patients in Hospital Universiti Sains Malaysia (HUSM), Malaysia

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SUMMARY OF OBJECTIVE, MATERIALS, METHODS AND RESULTS

This study aimed to determine the validity and examine the reliability of the Malay

version of Auditory Verbal Learning Test (MVAULT) for Malaysian population use and to determine the level of performance of the test among schizophrenia patients in HUSM.

Methods

The subjects were 15 schizophrenia patients conveniently selected from the patients that attended follow up in psychiatry clinic in HUSM or inpatient who have been admitted in the ward during the study period (December 2007 till May 2008) and 15 healthy control subjects as a comparison.

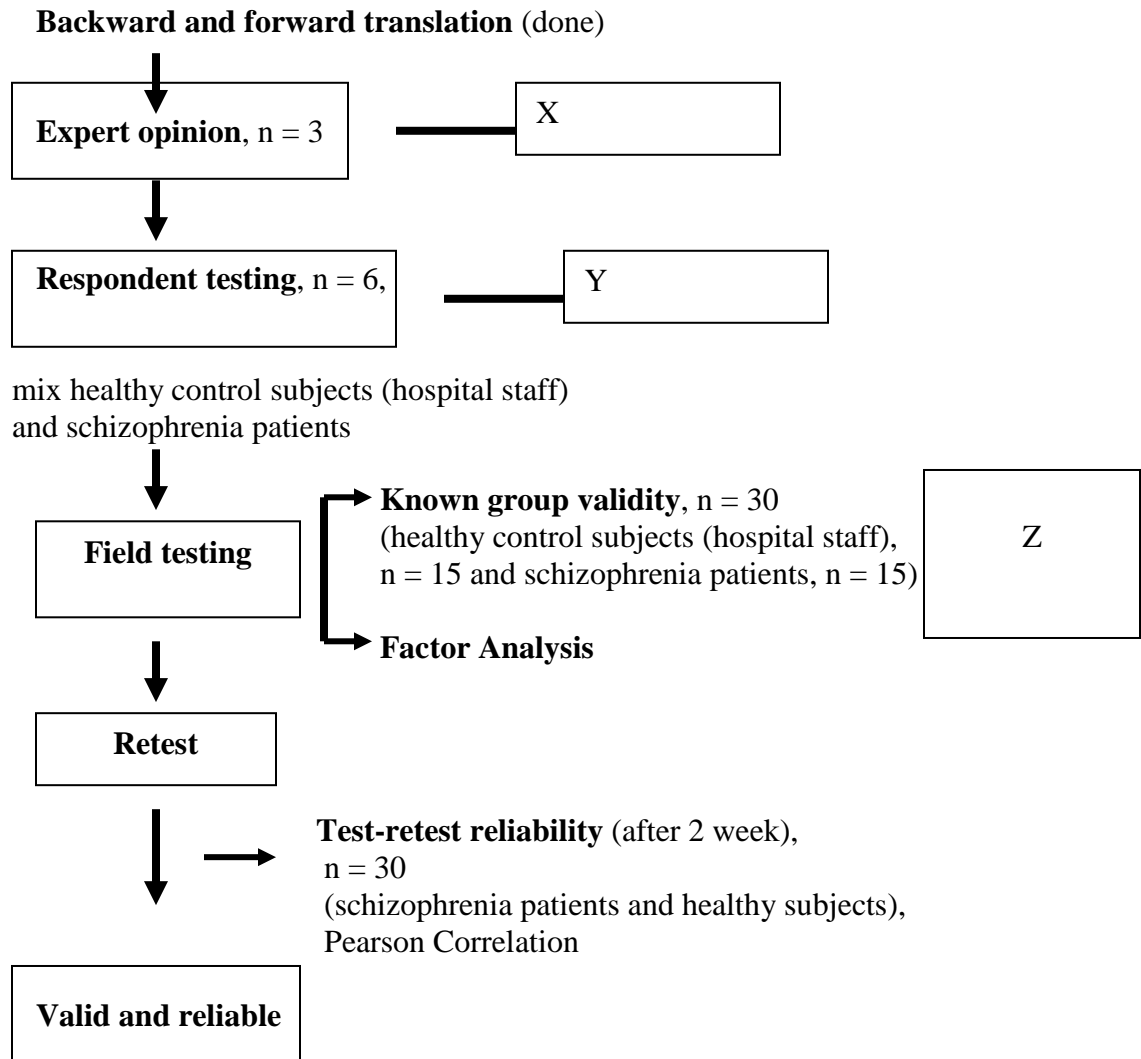
The RAVLT was translated into Malay language using translation and back translation method. The translation process was carried out by a senior lecturer and psychiatrist.

The initial part of the validity of this research was measured by giving the questionnaire to three medical personnel who have experience in using the RAVLT which include two senior lecturers and psychiatrists from the Psychiatry Department and a psychologist and lecturer from Neuroscience Department of HUSM. Both of them agreed with the content of the test. Later, another validity process was measured by giving the test to six subjects who include healthy control subjects and schizophrenia patients who received treatment in HUSM. The hospital staffs served as healthy control subjects and screened for previous psychiatric and

neurological disturbances. The test was reassessed and conclusion was made that the test appears to measure what it is supposed to measure and it seem like a reasonable way to gain the information the researches are attempting to obtain. Subsequently, a validity was measured by using factor analysis (FA) and known group validity. Data were subjected to principal component factor analysis (PCA) with varimax rotation using a single factor, as suggested by the previous factor analytic studies.

Test-retest reliability was conducted on 30 subjects including 15 schizophrenia patients conveniently selected from the patients that attended follow up in psychiatry clinic in Hospital Universiti Sains Malaysia or inpatient who have been admitted in the ward during the study period and 15 healthy control subjects. The reason why the healthy control subjects were involved in this phase was because the researcher wanted to get some idea regarding the level of performance of the test in the normal participants and to know whether the test was able to discriminate both of the groups involved. The test was administered by the same interviewer who was trained by the expert and was re-administered again after two weeks interval.

Figure 1. Flow chart of pilot study on validation of Malay Version Auditory Verbal Learning Test (MVAVLT).



Results

Data were obtained from this study, and were subjected to principal component factor analysis (PCA) with varimax rotation using a single factor, as suggested by the previous factor analytic

studies. All MVAVLT indexes in this study loaded on the first factor with loadings of 0.66 to 0.98. The results of single factor, factor analysis of MVAVLT for 7 indexes are shown in table 2.

Table 2 : Factor Analysis of MVAFLT.

MVAFLT trials	Factor Loading
A1	0.834
A5	0.944
Total A1 – A5	0.975
B1	0.664
A6	0.913
A7	0.941
Recognition	0.818

Extraction Method: Principal Component Analysis. a 1 components extracted. % of variance 76.678

Table 3 : Malay Version Auditory Verbal Learning Test (MVAFLT) scores in normal healthy staffs and schizophrenia patients.

MVAFLT trials	Normal healthy staffs (n = 15) Mean (SD)	Schizophrenia patients (n = 15) Mean (SD)	Mean differences (95% CI)
A1	8.5 (2.20)	5.9 (2.09)	2.5 (0.93 — 4.14)*
A5	12.2 (1.78)	8.2 (3.05)	4.0 (2.13 — 5.87)*
Total A1-A5	53.2 (7.72)	34.5 (12.09)	18.7 (11.08 — 26.26)*
B1	5.0 (1.60)	3.3 (1.53)	1.7 (0.56 — 2.91)
A6	11.0 (2.51)	7.1 (3.20)	3.9 (1.79 — 6.08)*
A7 (delayed recall)	11.1 (2.49)	6.7 (2.74)	4.4 (2.44 — 6.36)*
Recognition	14.3 (0.88)	11.5 (2.92)	2.7 (1.12 — 4.35)*

* Independent samples test is significant at the 0.05 level (2-tailed).

QUESTIONS (Model Answers given below after each questions)

1. Based on figure 1, name the type (or stage) of validity in each box of X, Y, Z (3 marks)

X = Face validity

Y = Content validity

Z = Construct validity (or concurrent)

2. Based on table 2, factor analysis was done to confirm the validity of the MVAVLT.

a) Briefly outline what is factor analysis (FA)? (2 marks)

Factor analysis is a statistical method used to describe variability among observed variables in terms of fewer unobserved variables called **factors**. The observed variables are modeled as linear combinations of the factors, plus "error" terms. The information gained about the interdependencies can be used later to reduce the set of variables in a dataset.

b) Briefly outline your findings in table 2 (2 marks)

MVAVLT had a good construct validity, with factor analysis findings (or factor loadings) of 0.66 to 0.98.

c) In this study, give ONE benefit of using FA to measure the validity of MVAVLT? (2 marks)

It reduces cultural influences that might be present when RAVLT was translated into its Malay version, considering that the understanding of psychiatric disorders in the West is most probably different from the local population.

“Data were obtained from this study were subjected to PCA with varimax rotation..., as suggested by the previous factor analytic studies.” What kind of FA is this? (1 mark)

Confirmatory FA

3. (a) What kind of validity that was measured in table 3? (1 mark)

Discriminant validity.

(b) What is meant by the below findings (from table 3)? (2 marks)

MVAULT trials	Normal healthy staffs (n = 15) Mean (SD)	Schizophrenia patients (n = 15) Mean (SD)	Mean differences (95% CI)
A1	8.5 (2.20)	5.9 (2.09)	2.5 (0.93 — 4.14)

There was a **significant** difference between the mean of A1 on MVAULT trials where patients with schizophrenia scored less than the normal healthy staffs (mean of 5.9 versus 8.5), as $p < 0.01$.

(b) Summarize three findings in table 3 (3 marks)

The MVAULT was able to discriminate between healthy control participants and schizophrenia patients (1 mark).

Schizophrenia patients performed significantly worse than healthy controls in all indexes measured in MVAULT (1 mark).

The pattern of the impaired performance in the MVAULT is suggestive of a primary memory dysfunction because if the memory impairment is due to the secondary consequence of deficits in word generation (verbal fluency), deficits in free recall but not recognition would have been expected. (1mark).

4. (i) What is one MAIN limitation of this study? (1 mark)

(i) Small sample size, N= 15

(ii) The interval of test-retest from the previous studies were not standardized, which ranged between 2 hours and 1 month. Most of the international studies used a duration between 1 and 2 weeks.

ii) How would you recommend to improve this kind of study in the future? Give 3 suggestions. (3 marks)

(i) Increase sample size

(ii) To standardize the time frame for the test-retest

(iii) To improve the inter-rater agreement

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