Original Article

Validation of Malay Version of Snaith-Hamilton Pleasure Scale: Comparison between Depressed Patients and Healthy Subjects at an Out-Patient Clinic in Malaysia

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Abstract

***Background*: The Snaith-Hamilton Pleasure Scale (SHAPS) is a self-assessment scale designed to evaluate anhedonia in various psychiatric disorders. In order to facilitate its use in Malaysian settings, our current study aimed to examine the validity of a Malay-translated version of the SHAPS (SHAPS-M).**

***Methods:* In this cross-sectional study, a total of 44 depressed patients and 82 healthy subjects were recruited from a university out-patient clinic. All participants were given both the Malay and English versions of the SHAPS, Fawcett-Clark Pleasure Scale (FCPS), General Health Questionnaire 12 (GHQ-12), and the Beck Depression Inventory (BDI) to assess their hedonic state, general mental health condition and levels of depression.**

***Results:* The results showed that the SHAPS-M has impressive internal consistency ($\alpha = 0.96$), concurrent validity and good parallel-form reliability (intraclass coefficient, ICC = 0.65).**

***Conclusion:* In addition to demonstrating good psychometric properties, the SHAPS-M is easy to administer. Therefore, it is a valid, reliable, and suitable questionnaire for assessing anhedonia among depressed patients in Malaysia.**

Keywords: *anhedonia, depression, pleasure, Malaysia, validation, psychiatry, psychology, neuroscience*

Introduction

Anhedonia is defined as the loss of the ability to experience pleasure due to the dysfunction or impairment of normal psychological and neurobiological mechanisms. It is found to be a major endophenotype and often recognised as the core symptom in the psychopathology of major depressive disorder (MDD) (1). The Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) requires that either depressed mood or anhedonia be present in order to support this diagnosis (2).

Although recognised as a primary symptom of depression, the measure of hedonic capacity has received relatively little research attention when compared to the measures of depression severity (3). Similarly, depression research in Malaysia has largely emphasised prevalence rates, assessments, and treatments of depression, with little or no studies that specifically measure hedonic capacity (4,5). Anhedonia symptoms are enduring and may not correlate with depression severity (6). Nevertheless, studies that looked into the assessment of depression in the Malaysian context often use mainline questionnaires which provide an overall measure of depression, regardless of the severity of anhedonic symptoms (4).

There are many instruments and scales used in depression research to measure hedonic capacity, among the more common ones are

the Snaith–Hamilton Pleasure Scale (SHAPS), Fawcett-Clark Pleasure Scale (FCPS), and the Revised Chapman Physical Anhedonia Scale (CPAS) (7–9). However, the SHAPS has demonstrated the highest factor loading in defining hedonic capacity amongst the three scales (10). SHAPS is a 14-item, self-reporting instrument developed in 1995 to assess hedonic capacity, with additional merits over other similar scales in keeping biases in terms of age, culture, and gender differences to a minimum (7). It measures hedonic tone, as well as its absence, anhedonia. The four major domains covered in the scale are interest/pastimes, social interaction, sensory experience, and food/drink. These items relate closely to the experiences likely encountered by the majority in a population.

Since it is a self-assessment scale, language plays an important role in determining the simplicity and ease of use of this instrument among patients in their local settings. In the past, the scale has been translated into many other major languages, including French, German, Dutch, Japanese and Chinese (11–15). All of these translated versions of the SHAPS have shown great clinical utility and sound psychometric properties. As the Malay language is the primary and national language in Malaysia, it is essential to provide our local patients with a Malay translated version of the SHAPS scale (SHAPS-M). The purpose of our study was, therefore, to validate the Malay version of SHAPS among a group of out-patients at a clinic in Malaysia, and to ascertain its psychometric properties, particularly its internal consistency, parallel-form reliability and concurrent validity.

Materials and Methods

Study design

This was a cross-sectional study conducted at the psychiatric out-patient clinic at the University Malaya Medical Centre in Kuala Lumpur, Malaysia, from November 2012 until February 2013. The study protocol was approved by the Medical Ethics Committee (MEC) at the University Malaya Medical Centre, and the study subjects were recruited using convenience sampling from the clinic. The selection criteria for the depressed subjects included those with the diagnosis of major depressive disorder based on the DSM IV, without other major psychiatric illnesses or psychoses, and those who understood and were able to read the Malay or English languages, were 18 years old and above, and consented to this study. The non-depressed group fulfilled the same criteria, with the exception of the diagnosis of major depressive disorder. We estimated the sample size to be 70 depressed subjects and 140 non-depressed subjects (ratio of 1 to 2), based on the calculation of 5 cases per item in the SHAPS (total of 14 items) (16).

Patients with major depressive disorder were identified from the clinic, and they were approached and explained about the study. Those who agreed and consented to participate were recruited into the study, and visitors or family members were recruited into the non-depressed group as the healthy subjects. The socio-demographic information about the patients and healthy subjects (age, gender, ethnicity, religion, education, and employment) were collected. All subjects' hedonic states, general mental health conditions and levels of depression were assessed using the following questionnaires.

The Assessment Questionnaires

Snaith-Hamilton pleasure scale (SHAPS)

The SHAPS is an instrument developed for the assessment of hedonic capacity (7). It is a self-reporting scale containing 14 items, and each of the items has a set of four response categories: definitely agree, agree, disagree and definitely disagree. Unlike the English version of the SHAPS, the Malay version of the SHAPS (SHAPS-M) applied a reversed scoring scale; with the definitely disagree response receiving a score of 1 and definitely agree response receiving a score of 4. Thus, the SHAPS is scored as the sum of 14 items so that the total scores ranged from 14 to 56. A lower total SHAPS score indicates a higher level of anhedonia.

Fawcett-Clark pleasure scale (FCPS)

The FCPS is another questionnaire developed to assess the hedonic state of the respondents (8). It is a 36-item self-rated questionnaire asking respondents to rate imagined hedonic reactions to different pleasurable situations (e.g. listening to beautiful music). Unlike the SHAPS, which requires the respondents to rate their hedonic state based on the past few days, the FCPS instructs the respondents to rate their current state, instead. The items in the FCPS are scored on a 5-point Likert scale (1 = no pleasure at all, 5 = extreme and lasting pleasure). Higher FCPS total scores indicate a greater pleasure capacity.

Beck depression inventory (BDI)

The BDI is a 21-question multiple choice self-reporting inventory developed by Beck et al. in 1961 (17). It is used to measure the degree of depression which includes the intensity, severity, and depth of depression. The items are scored on a Likert scale ranging from zero to three, which denotes the severity of symptoms. Items 1 through 13 evaluate the psychological symptoms, while items 14 through 21 evaluate the physical symptoms. The total BDI score shows the degree of depression, and a higher score indicates a greater degree of depression. The original version of the BDI was translated into the Malay language, and the psychometric properties were established in the previous study with an internal consistency of 0.89. It has been highly correlated with the Edinburg Postpartum Depression Scale (EPSD) and Hamilton Rating Scale for Depression (18).

General health questionnaire 12 (GHQ)

The GHQ was developed by Goldberg in 1970 (19), and it has been extensively used in various clinical and research settings for the screening or measurement of the respondents' mental health. At present, there is a range of the shortened version of the GHQ. The GHQ-12 is an easy-to-use, simple and brief self-reporting measure of the current mental state, and the scale assesses whether the respondents have experienced a particular symptom or behaviour recently. The GHQ-12 has 12 items rated on a Likert scale (0 to 4) and the total scores range from 0 to 36. A higher score indicates a higher level of psychological distress. The reliability of the Malay version of the GHQ was established in a previous study where the Cronbach's alpha was 0.85 (20).

Procedure

The English version of the SHAPS was first translated into the Malay language by two bilingual psychiatrists (Malay and English). Subsequently, two other bilingual psychiatrists have back-translated the SHAPS from Malay to English, using the back-translation technique (21). The translated version was pilot tested among 20 staff nurses for face validity. Item 6, "I would find pleasure in the smell of freshly baked bread" was revised to "freshly cooked food" in view of the diet preference in Malaysia. Item 8, "I would enjoy looking smart when I have made an effort with my appearance" was revised to "I would enjoy cleaning and tidying my room" to suit the local living culture that emphasises the cleanliness of one's living environment rather than personal appearance. Based on the popularity and current habit of "Internet surfing", this was added to Item 9, "I would enjoy reading book, magazine or newspaper". The finalised version was further reviewed by two consulting psychiatrists for content validity and to ensure satisfactory face, semantics, criterion and conceptual equivalence (21,22).

All subjects (consisting of depressed patients and healthy visitors or family members) who consented to the study were then given 5 assessment questionnaires to be completed (Malay version of SHAPS [SHAS-M], English version of SHAPS, FCPS, BDI, and GHQ).

Statistical analysis

The results were analysed using the SPSS version 13.0, and the descriptive statistics were used to examine the baseline characteristics data. The internal consistency of the SHAPS-M was assessed using Cronbach's alpha coefficient, and the normality of the data was assessed using the Kolmogorov-Smirnov analysis. The intraclass coefficient (ICC) was used to examine the parallel reliability between the SHAPS-M with the original version of the SHAPS, and Pearson's correlation was used to examine the concurrent validity between the SHAPS-M with the FCPS, GHQ and BDI. The association of the SHAPS with the participants' socio-demographic characteristics was analysed using an independent-test. The independent t-test was also used to examine the SHAPS-M total and each items score between the depressed cases and controls. A multi-factorial ANOVA analysis was used to calculate adjusted mean differences by including ethnicity (significantly associated demographic characteristic with SHAPS-M) as an adjusted variable. The optimal SHAPS-M cut off score for depressed cases was determined from the co-ordinate points, whereby the sensitivity and specificity were optimal in the Receiver Operating Characteristic (ROC) analyses. The Area Under the Curve (AUC) of the ROC was determined. The principal component analysis (PCA) with a varimax rotation method was used to explore the factorial construct of the scale.

Results

A total of 44 depressed patients and 82 healthy subjects consented for this study. The mean age was 40 years old, whereby, the subjects

in the case group were approximately 8 years younger than those in the control group. There were more male (57.3%), Malay (53.7%), and Muslim (57.3%) subjects in the control group, while most of the participants were married (58.7%) and achieved at least a secondary level of education (92.9%). Additionally, there were more cases of depressed subjects who were unemployed (61.4%) (Table 1).

The SHAPS-M exhibited good internal consistency, with a Cronbach's alpha coefficient of 0.96. All items had corrected-item total correlations of more than 0.7 (Table 2). The parallel-form reliability of the SHAPS-M and original version of the SHAPS were fairly good, as demonstrated by the intraclass correlation (ICC) of 0.65 ($P < 0.01$). The SHAPS-M was positively correlated with the FCPS (r = 0.68, $P < 0.01$) and negatively correlated with the GHQ (r = 0.52, $P < 0.01$) and BDI (r = 0.54, $P < 0.01$) (Table 3).

A single factor was extracted with the Principal Component approach (eigenvalue > 1.00), which accounted for 60.8% of the variance.

Table 1: Sociodemographic characteristics of 44 depressed patients and 82 control participants

Variable	Cases		Total (N = 126)
	Depression (n = 44)	Non-Depressed (n = 82)	
Age (years)[a]	45.34 (19.43)	37.01 (12.58)	39.97 (15.80)
Gender[b]			
Male	20 (45.5)	47 (57.3)	67 (53.2)
Female	24 (54.5)	35 (42.7)	59 (46.8)
Race[b]			
Malay	13 (29.5)	44 (53.7)	57 (45.2)
Chinese	19 (43.2)	20 (24.4)	39 (31.0)
Indian	10 (22.7)	13 (15.9)	23 (18.3)
Others	2 (4.5)	5 (6.1)	7 (5.6)
Religion[b]			
Muslim	14 (31.8)	47 (57.3)	61 (48.4)
Buddhist	10 (22.7)	11 (13.4)	21 (16.7)
Christian	9 (20.5)	15 (18.3)	24 (19.0)
Hindu	7 (15.9)	9 (11.0)	16 (12.7)
Others	4 (9.1)	0 (0)	4 (3.2)
Marital status[b]			
Single	19 (43.2)	29 (35.4)	48 (38.1)
Married	21 (47.7)	53 (64.6)	74 (58.7)
Divorced/widowed	4 (9.1)	0 (0)	4 (3.2)
Education[b]			
Primary	4 (9.1)	2 (2.4)	6 (4.8)
Secondary	21 (47.7)	32 (39.0)	53 (42.1)
Tertiary	18 (40.9)	46 (56.1)	64 (50.8)
None	1 (2.3)	2 (2.4)	3 (2.4)
Occupation[b]			
Employed	17 (38.6)	53 (64.6)	70 (55.6)
Unemployed	27 (61.4)	29 (35.4)	56 (44.4)

[a]Mean (SD).
[b]n (%).

The screen plot graphically displayed a single predominant factor. This finding demonstrated that the SHAPS-M contained only a single construct in measuring the hedonic state of the study subjects.

The association analysis using the independent t-test demonstrated that ethnicity and religion were the significant associations with the SHAPS-M scores among the respondents (Table 4). The SHAPS-M scores for the depressed cases (38.33) were significantly lower than the controls (47.11), even after adjusting for ethnicity. For each item, the scores among the depressed cases were significantly lower than those in the control group ($P < 0.01$) (Table 5). The area under the receiver operating characteristic curve (AUC) was 0.814 (95% CI = 0.726-0.901). The optimal cut-off score to distinguish depressed cases from the control was 42, with a sensitivity of 0.79, specificity of 0.74, positive predictive value of 0.66 and negative predictive value of 0.79 (Table 6).

Discussion

Our present cross-sectional study, comparing 44 depressed patients and 82 healthy subjects, showed that the translated Malay version of the SHAPS demonstrated impressive psychometric properties in terms of its validity and reliability as an instrument in evaluating the hedonic state among Malaysian subjects at a university out-patient clinic. The excellent internal consistency of this instrument, as reflected by a high Cronbach's

Table 2: Corrected Item – Total correlations and Cronbach's α if Item deleted for the SHAPS-M

SHAPS-M	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Item 1	23.31	55.287	0.715	0.938
Item 2	23.45	55.199	0.617	0.942
Item 3	23.20	54.384	0.714	0.939
Item 4	23.34	54.873	0.758	0.937
Item 5	23.29	55.056	0.716	0.938
Item 6	23.14	53.899	0.740	0.938
Item 7	23.36	55.061	0.716	0.938
Item 8	23.40	55.333	0.676	0.940
Item 9	23.19	55.267	0.664	0.940
Item 10	23.38	55.389	0.707	0.939
Item 1	23.23	54.967	0.742	0.938
Item 12	23.34	54.449	0.784	0.937
Item 13	23.41	55.739	0.727	0.938
Item 14	23.39	55.170	0.725	0.938

Abbreviation: SHAPS-M = Malay version of Snaith-Hamilton Pleasure Scale.

Table 3: Pearson's correlation (r) between the Malay version of SHAPS (SHAPS-M) and the original version of SHAPS, FC, GHQ, and BDI

	SHAPS	SHAPS-M	FCPS	GHQ	BDI
SHAPS	1.000	0.653*	0.472*	−0.454*	−0.539*
SHAPS-M	0.653*	1.000	0.678*	−0.516*	−0.544*
FCPS	0.472*	0.678*	1.000	−0.420*	−0.492*
GHQ	−0.454*	−0.516*	−0.420*	1.000	0.764*
BDI	−0.539*	−0.544*	−0.492*	0.764*	1.000

Abbreviations: SHAPS = Snaith-Hamilton Pleasure Scale, FCPS = Fawcett-Clark Pleasure Scale, GHQ = General Health Questionnaire, BDI = Beck Depression Inventory, *$P < 0.01$.

alpha value, indicated a high level of homogeneity among the items in the scale, and the parallel-forms reliability was also noted to be good. Our results showed that the psychometric properties of the SHAPS-M are also consistent with other translated versions of the SHAPS (11–15).

The SHAPS-M contained items which had a wider range of applicability, which were generally more relevant, and the construct was to minimize bias in social class, gender, age, dietary habits and nationality (7). Being a state-level scale which assessed the hedonic capacity based on "experience in the last few days", the SHAPS-M appeared to be more relevant to depressive states (10). The optimal cut-off value of the SHAPS-M score in order to discriminate depressed cases from healthy subjects, as determined in this study, was 42. However, we must take into consideration that the wording of the SHAPS-M was limited to hypothetical pleasurable situations (e.g. "I would enjoy my favourite television or radio program"); therefore, this value might not be a primarily significant indicator of hedonic capacity or anhedonic state.

Although our study showed the promising and sound properties of the SHAPS-M, it was hampered by some limitations which should be acknowledged. First, it was a cross sectional study, in which only the association was established but not the causation. Second, there was no clinical information about the depressed patients participating in this study. The SHAPS, in general, is not suitable for subjects who are physically ill, as the ability to experience pleasure is definitely an important aspect of the concept of "quality of life"; and the scale is not valid for blind subjects, as four of the items depend upon visual experience. Finally, the sampling of the measures was quite restricted, and the number of subjects for our current study did not achieve the initial estimated sample size; thus, the results could not be assumed to be general to an actual

Table 4: Comparison of SHAPS-M score of the subjects between each demographic characteristics

Variable	SHAPS score Mean (sd)	Mean difference (95% CI)	t* (df)	*p* value
Age (years)				
< 40	44.67 (8.40)	0.98	0.64	0.522
≥ 40	43.69 (8.01)	(−2.05, 4.02)	(2)	
Gender				
Male	43.18 (8.74)	−2.52	−1.68	0.096
Female	45.70 (7.48)	(−5.50, 0.46)	(2)	
Ethnicity				
Malay	46.79 (6.95)	4.74	3.29	0.001
Non-Malay	42.05 (8.68)	(1.89, 7.60)	(2)	
Religion				
Muslim	46.63 (6.87)	4.67	3.24	0.002
Non-Muslim	41.97 (8.84)	(1.81, 7.52)	(2)	
Education				
Secondary and below	43.05 (7.41)	−2.40	−1.61	0.109
Higher than secondary	45.45 (8.85)	(−5.34, 0.54)	(2)	
Marital status				
Single	42.48 (9.19)	−2.99	−1.98	0.050
Married	45.47 (7.36)	(−5.98, 0.01)	(2)	
Occupation				
Employed	45.30 (6.33)	2.38	1.59	0.116
Unemployed	42.92 (10.14)	(−0.59, 5.36)	(2)	

*Independent *t* Test.
SHAPS-M = Malay version of Snaith-Hamilton Pleasure Scale.

Table 5: Comparison of SHAPS-M total and each item scores between depressed cases (n = 44) and control (n = 82)

SHAPS-M	SHAPS mean scores Mean (SD)		Mean difference	Adjusted mean difference[a] (95% CI)	*P* value
	Case	Control			
Item 1	2.72 (0.65)	3.38 (0.66)	0.66	0.65 (0.40, 0.91)	< 0.001
Item 2	2.82 (0.79)	3.57 (0.74)	0.75	0.76 (0.46, 1.05)	< 0.001
Item 3	2.51 (0.82)	3.35 (0.69)	0.84	0.84 (0.55, 1.12)	< 0.001
Item 4	2.64 (0.71)	3.26 (0.64)	0.62	0.60 (0.34, 0.86)	< 0.001
Item 5	2.67 (0.66)	3.35 (0.64)	0.69	0.69 (0.44, 0.94)	< 0.001
Item 6	2.56 (0.75)	3.30 (0.66)	0.74	0.72 (0.46, 0.99)	< 0.001
Item 7	2.82 (0.82)	3.45 (0.59)	0.63	0.63 (0.37, 0.90)	< 0.001
Item 8	2.72 (0.92)	3.48 (0.63)	0.76	0.74 (0.46, 1.03)	< 0.001
Item 9	2.69 (0.86)	3.27 (0.72)	0.58	0.54 (0.25, 0.84)	< 0.001
Item 10	2.77 (0.84)	3.32 (0.61)	0.55	0.56 (0.29, 0.82)	< 0.001
Item 11	2.79 (0.73)	3.20 (0.66)	0.40	0.40 (0.13, 0.66)	< 0.001
Item 12	2.79 (0.80)	3.39 (0.62)	0.60	0.59 (0.32, 0.85)	< 0.001
Item 13	2.92 (0.74)	3.51 (0.61)	0.59	0.58 (0.33, 0.83)	< 0.001
Item 14	2.90 (0.71)	3.28 (0.71)	0.38	0.37 (0.09, 0.64)	< 0.001
Total	38.33 (8.08)	47.11 (6.68)	8.78	8.66 (5.88, 11.43)	< 0.001

SHAPS-M = Malay version of *Snaith-Hamilton Pleasure Scale*.
[a]adjusted for ethnicity using multifactorial ANOVA.

Table 6: Sensitivity and specificity of each coordinates for the receiver operating characteristic curve of the SHAPS-M to determine depressed cases in the study subjects

SHAPS-M score	Sensitivity	Specificity
39	0.915	0.538
40	0.878	0.590
41	0.866	0.590
42	0.793	0.744
43	0.695	0.769
44	0.671	0.769
45	0.610	0.821

SHAPS-M = Malay version of Snaith-Hamilton Pleasure Scale.

clinical sample. Nevertheless, despite all of the limitations, the results of our study were still very significant.

Conclusion

In conclusion, the SHAPS-M is not only simple to administer, but it is also a reliable and valid questionnaire in the assessment of the hedonic state among Malaysians.

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Conflicts of interest

None.

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None.

Authors' Contributions

Conception and design: NCG, CSC, AHAY, LHS, AHS, MHH
Analysis and interpretation of the data: NCG, CSC, AHAY, SSKW
Drafting of the article, critical revision of the article for the important intellectual content, final approval of the article: NCG, CSC, AHAY, LHS, AHS, SSKW, MHH
Provision of study materials or patient, btaining of funding, collection and assembly of data: NCG, CSC
Statistical expertise: NCG, CSC, AHAY
Administrative, technical or logistic support: NCG, CSC, AHS, SSKW, MHH

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