Quest for Research Excellence On Computing, Mathematics and Statistics

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Faculty of Computer and Mathematical Sciences

Quest for Research Excellence on Computing, Mathematics and Statistics

Chapters in Book

The 2nd International Conference on Computing, Mathematics and Statistics (iCMS2015)

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CHAPTER 27
Reliability and Construct Validity of DASS 21 using Malay Version: A Pilot Study

Kartini Kasim, Norin Rahayu Shamsuddin, Wan Zulkipli Wan Salleh, Kardina Kamaruddin, and Norazan Mohamed Ramli

Abstract. A pilot study was conducted to examine the internal consistency reliability and construct validity for the Malay-version of the Depression Anxiety Stress Scale-21 (DASS 21).A total of 349 participants were involved that consisted of academic and administration staff from a local university in Kedah. The specificity of the individual DASS 21 items was assessed from self-administeredquestionnaires. Our results indicated a satisfactory internal consistency based on the Cronbach's alpha values. The depression, anxiety and stressvalues are 0.92, 0.78 and 0.84, respectively, which was in the range of good to excellent indication.. The factor loading analysishas also shown a good factor loading for most items (0.30 to 0.79) which explains the theoretical construct of this instrument. These result suggested that the Malay-version DASS 21 is reliable and valid for assessing depression, anxiety and stress in other institutions.

Keywords: depression; anxiety; stress; reliability; validity; malay version DASS 21

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1 Introduction

Depression is one of the leading causes of burden of disease worldwide (Murray and Lopez, 1996).However there are insufficient studies examining the effects of depression in the workplace (Wang & Gorenstein, 2015) . Individuals with depression are reported to showdecline in productivity than those without depression (Herrman et al., 2002; Kessler, 2012). Nevertheless, comprehensive data of depression-related work performance and loss productivity are major gap of health knowledge, where information on expenditure, impairment, morbidity, and accident injury is jointly combined (Oortwijn et al., 2011). Clinical depression can harmfully affects the employee's work satisfaction and performance, resulting in much functioning troubles at home, at school, among interpersonal relationships, and in the workplace (McIntyre et al., 2013, 2015), therefore requiring prompt and correct diagnosis and focused treatment. Some consequences of depression in the workplace are productivity fall; take off work, and sick leave (Kessler, 2012).

Depression, anxiety and stress scale also known as DASS, is a self-report instrument. It was designed to measure three related negative emotional states of depression, anxiety and stress (DASS, 2014). The shortest version of DASS-21 was developed by Lovibond&Lovibond (1995)is simple and easy to administer by general population without the need of special training. This instrument has been used widely for clinical (Ng et al. 2007; Wood et al. 2010) and non-clinical study (Sinclair et al. 2012;Bayram&Bilgel, 2008). The items in the depression scale tap mainly on dysphoria, low self-esteem, and lack of incentive. The items in the stress scale measure negative affectivity responses, such as nervous tension and irritability whichare the characteristics of both depression and anxiety (Brown, Chorpi- ta, Korotitsch, & Barlow, 1997; Crawford & Henry, 2003), while items in the anxiety scale measure somatic and subjective responses to anxiety and fear.

The shorter 21-item version of DASS (DASS-21) takes 5 to 10 minutes to complete. The internal consistency for each of the subscales of the 42-item and the 21-item versions of the questionnaire are typically high (eg Cronbach's α of 0.96 to 0.97 for DASS- Depression, 0.84 to 0.92 for DASS-Anxiety, and 0.90 to 0.95 for DASS-Stress (Lovibond 1995, Brown et al 1997, Antony et al 1998, Clara 2001, Page 2007). There is good evidence that the scales are stable over time (Brown et al 1997) and responsive to treatment directed at mood problems (Ng 2007). There are evidences that shows construct (Lovibond 1995) and convergent (Crawford and Henry 2003) validity for the anxiety and depression subscales of both the long and short versions of the DASS.

The Depression Anxiety Stress Scales (DASS) hasbeen translated in various languages and validated in different populations. Numerous studies

for the validation of DASS 21 have been conducted either for racial group (Crawford et al., 2009; Norton, 2007), culture(Tian et al. 2013) or in various language version (Ma, 2010; Bados, Solanas& Andrés, 2005).Our study aimed to construct the validity and reliability of Malay version DASS-21 in higher education institution.

2 Methodology

A special permission from the original author of DASS (Peter Lovibond) and author of DASS Malay Version (Ramli Musa) were acquired before the commencement of this study. A total of 349 questionnaires of DASS-21were distributed to all staff in one of local university in Kedah which included the academicians and administrators. A permission to circulate the questionnaire was obtained from the Head of the university.The participants were explained on the confidentialityof the result and the information gathered wouldonly be used for research purposes.

The Malay-version DASS-21is developed to measure emotional status which can be sub-categorized into three parts – depression, anxiety and stress based on four rating scales.The rating scale ranging from 0 ("Strongly Disagree")to3 ("Totally Agree"). Each subscale of the Malay-version DASS consists of seven items that evaluate the emotional states of depression, anxiety and stress. The final result is obtained by summing the scores of the items on each subscale.

Subscale scores from the shorter questionnaire are converted to the DASS normative data by multiplying the total scores by two (2). The higher the score obtained, the severe the emotional status of participant. Detail of the information can be seen in Table 1.

Table 9.DASS severity ratings (Lovibond and Lovibond, 2005).

Severity Rating	**Depression**	**Anxiety**	**Stress**
1. Normal	0-9	0-7	0-14
2. Mild	10-13	8-9	15-18
3. Moderate	14-20	10-14	19-25
4. Severe	21-27	5-19	26-33
5. Extremely Severe	>28	>20	>34

The DASS scores independently diagnose discrete mood disorders such as depression and it does not intended to replace a complete psychological assessment. If DASS scores suggest that a participant has significant

symptoms of depression, anxiety, or stress, then referral to a qualified psychologist with experience in managing mood disturbance is required.

3 Result

3.1 Demographic Variable of DASS-21

A total of 349 staffs from UiTM Kedah hadagreed to participate in this study. Table 2 summarized the demographic characteristics of the participants in this study. Majority of the respondents involved in the study were dominated by female staff and master degree holder which accounted more than half of respondents.

Table 2. Demographic data.

	Number	%
Gender		
Female	192	55.0
Male	157	45.0
Education Level		
Doctorate	17	4.9
Master	187	53.58
Degree	27	7.74
STPM/Diploma	52	14.90
PMR/SPM	64	18.34
Others	2	0.57
Marital Status		
Single	48	13.75
Married	293	83.95
Others	8	2.29

3.2 Reliability (Internal Consistency)

The reliabilities of Malay DASS 21 (internal consistencies) were determined by using Cronbach's alpha. The value of Cronbach's alpha for overall items is 0.915, which indicated the overall item is in a good range. Result of corrected Item Total Correlation and Cronbach's alpha coefficients for all 21 items were given in Table 3. This three scale (Depression, Anxiety, Stress) had a good correlation with the other items (except item Q3,Q7,Q18) since the value of Corrected item Total Correlations greater than 0.50. Item for Q18(Stress) has

satisfactory value while two items Q3 and Q7 from Depression and Anxiety scale respectively show a moderate values.

3.3 Validity Test

Three factors that have the eigenvalues greater than 1 are retained using principal component analysis. The three factors maintained represent 55.03% of the item variance. It proves that Malay-version DASS 21 can explain the results on depression, anxiety and stress. Next, the confirmatory factor analysis isused to construct validity. Factor loading more than 0.3 is considered as good as shown in Table 4. All factors loading are ranged between 0.25 and 0.80. Items Q6 and Q20 have the lowest factor loadings..

Table 3. Cronbach's alpha

Question	Item Total Correlation	Cronbach Alpha
1	0.638	0.910
2	0.573	0.911
3	0.375	0.920
4	0.594	0.911
5	0.596	0.910
6	0.626	0.910
7	0.382	0.921
8	0.592	0.911
9	0.613	0.910
10	0.586	0.911
11	0.640	0.910
12	0.749	0.908
13	0.580	0.911
14	0.619	0.910
15	0.749	0.909
16	0.580	0.909
17	0.596	0.911
18	0.440	0.915
19	0.628	0.910
20	0.576	0.911
21	0.614	0.911

With reference to Table 4, the item Q6 does not gaugewith stress but had high factor loading on anxiety (0.779), whereas item Q20 shows a high factor loading on depression (0.810). By comparing the three scales (depression,

anxiety and stress), depression items generally had good factor loading as compared to other scales.

4 Conclusion

The Malay-version of DASS-21 showed satisfactory and high value of validity and reliability and their used for research in education area is warranted.

Table 4. Factor Loading

Summary		Scale		
		Depression	Anxiety	Stress
Q3	Perasaan positif	0.698		
Q5	Mendapat semangat	0.770		
Q10	Tiada apa diharapkan	0.522		
Q13	Sedih dan murung	0.606		
Q16	Tidak bersemangat	0.533		
Q17	Tidak berharga	0.490		
Q21	Tidak bermakna	0.774		
Q2	Mulut kering		0.621	
Q4	Kesukaran bernafas		0.608	
Q7	Menggeletar		0.488	
Q9	Panik dan membodohkan diri		0.574	
Q15	Menjadi panik		0.374	0.740
Q19	Tindak balas jantung		0.599	
Q20	Takut	0.810	0.283	
Q1	Sukar ditenteramkan			0.624
Q6	Bertindak keterlaluan		0.779	0.287
Q8	Tenaga cemas			0.690
Q11	Gelisah			0.700
Q12	Sukar untuk relaks			0.708
Q14	Tidak dapat sabar			0.704
Q18	Mudah tersentuh			0.603

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