DEVELOPMENT OF ANXIETY AND DEPRESSION INVENTORY FOR SECONDARY SCHOOL STUDENTS IN IRAN

MAHNAZ FALLAHI KHESHT MASJEDI

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DEVELOPMENT OF ANXIETY AND DEPRESSION INVENTORY
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By

MAHNAZ FALLAHI Khesht Masjedi

Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in
Fulfilment of the Requirements for the Degree of Doctor of Philosophy

October 2012
DEDICATION

To my dear late mother,
my father,
My beloved brother and my sisters

and

Professor, Dr Mohmad Jafar Modabernia
Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirements for the degree of Doctor of Philosophy

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Chairman : Zoharah Binti Omar, PhD
Faculty : Educational Studies

The purpose of the study was: (1) To determine the validity of A&D Inventory to measure anxiety and depression in secondary schools; (2) To determine the reliability of A&D Inventory in measuring anxiety and depression in secondary schools. The participants constituted of 579 students from the secondary school, whom were selected from teenagers who live in north of Iran in 2011-2012. Item pool generation was guided by the operational definition of the construct measured by the two theories: First, the Tripartite Model, and the second theory is the cognitive content specificity.

The instrument has been devised and validated through a scientific method to ensure its reliability and validity. The results provide evidence that the developed instrument achieved sound psychometric properties. The overall reliability value of Cranach’s
Alpha was .87. Also by Using EFA, the Anxiety & Depression inventory (A&D inventory) construct produced two significant factors. The hypothesized two-factor model identified via EFA in the Study consisted of 32 items, with 16 items belonging to anxiety and 16 items to depression.

The CFA results showed that the goodness-of-fit indices for the revised model were as follows: $\chi^2 =2111.222$, DF=403, CMIN/DF= 3.785, GFI=.920, CFI=.937, NFI=.912, TLI=.908 and RMSEA =.047; each of the indices was the threshold values.

To assess the convergent, construct reliability (CR), average variance extracted (AVE) method and discriminant validity were obtained. The construct reliability of all latent variables in this study was 0.95 in anxiety and 0.97 in depression. The average variance extracted values of latent variables in this table were between 0.78 in anxiety and 0.81 in depression and the last, AVE was greater than the squared correlation that demonstrated satisfactory discriminant validity.

Evidence for the convergent validity of the A&D Inventory demonstrated through its significant high correlation between anxiety items of A&D Inventory with BAI items were.80 and high correlation depression items of the A&D Inventory with BDI (.89).

Divergent validity of the A&D Inventory was demonstrated through its significant low correlation anxiety items of the A&D Inventory with BDI (.45) and low correlation depression items of the A&D Inventory with the BAI (.41).

The overall test-retest reliability value of Cranach’s Alpha was .90.

The A&D Inventory is simple, brief, and easy to administer. Indeed, the entire 32-item A&D Inventory takes no longer to complete than other symptom measures. Overall,
therefore, the A&D Inventory can provide differentiated symptoms between anxiety and depression in a very quick and efficient manner for Iranian secondary schools.

The measurement invariance of the Model across samples was done to test the factorial validity of the instrument. There is no significant difference between male and female in this study. The results of this study suggest that the items do not measure differences between male and female respondents. Overall, therefore, the A&D Inventory can provide differentiated symptom assessment in a very quick and efficient manner for Iranian secondary schools.
Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

PEMBANGUNAN INVENTORI KEBIMBANGAN DAN INVENTORI KEMURUNGAN UNTUK PELAJAR SEKOLAH MENENGAH DI IRAN

Oleh

MAHNAZ FALLAHI KHESHT MASJEDI

Oktober 2012

Pengerusi : Zoharah Binti Omar , PhD
Fakulti : Fakulti Pengajian Pendidikan

Tujuan kajian ini adalan untuk: (1) menentukan kesahihan daftar barangan A&D bagi mengukur tahap kebimbangan dan kemurungan di kalangan remaja; (2) menentukan kebolehpercayaan daftar barangan A&D bagi mengukur tahap kebimbangan dan kemurungan di peringkat sekolah menengah. Subjek bagi kajian ini adalah seramai 579 pelajar dari sekolah menengah dan mereka dipilih dari kalangan remaja yang tinggal di utara Iran pada tahun 2011-2012. Item pool generation telah dijadikan panduan berdasarkan definasi operasi yang diukur menggunakan dua teori berkaitan: Model Tripartite dan teori kandungan ketepatan kognitif.

Alatan yang digunakan untuk kajian ini telah dicipta dan disahkan melalui kaedah saintifik untuk memastikan kesahihan dan keboleh- percayaannya. Hasilnya, alat yang dicipta telah mencapai ciri-ciri psikometrik yang sesuai. Nilai keseluruhan tahap keboleh
percayaan Alpha Cranach mencatatkan .87. Malahan, dengan menggunakan EFA, daftar barangan Kebimbangan dan Kemurungan (A&D inventory) menghasilkan dua faktor yang signifikan. Hipotesis dua-faktor model yang dikenal pasti melalui EFA mempunyai 32 item, dengan 16 item mewakili kebimbangan dan 16 item lagi mewakili kemurungan.

Keputusan CFA menunjukkan bahawa indeks kebaikan-patut bagi model yang telah dikaji semula adalah seperti berikut: $\chi^2 = 2111.222$, DF=403, $\text{CMIN/DF} = 3.785$, GFI=.920, CFI=.937, NFI=.912, TLI=.908 and RMSEA =.047; di mana setiap satu indeks adalah ambang nilaian.

Bagi menguji pertembungan pembentukan keboleh percayaan (CR), kaedah cabutan purata berlawanan (AVE) dan kesahihan pembezalayan telah diperolehi. Pembentukan keboleh percayaan (CR) bagi semua pemboleh ubah tersembunyi dalam kajian ini adalah 0.95 bagi kebimbangan dan 0.97 bagi kemurungan. Nilai AVE bagi pemboleh ubah tersembunyi di dalam jadual ini adalah di antara 0.78 bagi kebimbangan dan 0.81 bagi kemurungan. Pada dasarnya, AVE sepatutnya lebih besar nilainya berbanding dengan korelasi kuasa dua bagi menunjukkan kesahihan pembezalayan yang memuaskan. Nilai AVE adalah 0.5 lebih besar berbanding dengan 0.5 penentuan pertembungan yang mencukupi.

Bukti bagi kesahihan pertembungan untuk daftar barangan A & D telah ditunjukkan melalui hubung kait yang tinggi antara perkara kebimbangan daripada daftar barangan A & D dengan perkara BAI adalah sebanyak 0.80 dan hubung kait yang tinggi juga bagi perkara kemurungan daripada daftar barangan A & D BDI sebanyak (.89).
Selain daripada itu, bukti bagi kesahkan pembezalayan daripada daftar barangan A & D telah ditunjukkan melalui hubung kaitnya yang rendah terhadap perkara kebimbangan daripada daftar barangan A & D dengan catatan BDI (.45) dan hubung kait yang sedikit terhadap perkara kemurungan daripada daftar barangan A & D BAI dengan catatan hanya (41).

Ujian dan ujian semula keboleh percayaan yang telah digunakan dalam selang masa 2 minggu melaporkan bahawa $r = .703$ bagi kebimbangan, $r = .841$ bagi kemurungan dan $r = .725$ bagi keseluruhan perkara. Secara amnya, keputusan yang diperolehi telah mempamerkan tahap keboleh percayaan yang sederhana.

Daftar barangan A & D adalah suatu alat yang mudah, ringkas dan senang untuk diuruskan. Malah, kesemua 32 perkara daftar barangan A & D mengambil masa yang singkat untuk digunakan berbanding alat-alat pengukur yang lain. Secara keseluruhannya, daftar barangan A & D boleh memberi perbezaan gejala antara kebimbangan dan kemurungan dalam suatu cara yang cekap dan pantas bagi remaja di Iran.
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In the name of God Almighty, my full praise is directed towards Him for providing me faith to complete my studies. I wish also to express my sincere gratitude and appreciation to the people who have directly and indirectly contributed to this thesis.

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I certify that a Thesis Examination Committee has met on 30/10/2012 to conduct the final examination of Mahnaz Fallahi Khesht Masjedi on her thesis entitled "Development of anxiety inventory and depression inventory for secondary school students in Iran" in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U. (A) 106] 15 March 1998. The Committee recommends that the student be awarded the Doctor of Philosophy.

Members of the Thesis Examination Committee were as follows:

Bahaman Abu Samah, PhD
Associate Professor
Institute for Social Science Studies
Universiti Putra Malaysia (Chairman)

Aminah bte Ahmad, PhD
Professor
Faculty Education Studies
Universiti Putra Malaysia (Internal Examiner)

Sidek bin Mohd Noah, PhD
Associate Professor
Faculty Education Studies
Universiti Putra Malaysia (Internal Examiner)

Catherine Salmon, PhD
Associate Professor
Department Chair in University of Redlands
University of Redlands in USA (External Examiner)

______________________________
SEOW HENG FONG, PhD
Professor and Deputy Dean
School of Graduate Studies
Universiti Putra Malaysia

Date:

x
This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfillment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee were as follows:

**Zoharah Binti Omar, PhD**  
Senior Lecture  
Faculty of Educational Studies  
Universiti Putra Malaysia  
(Chairman)

**Samsilah Binti Roslan, PhD**  
Associate Professor  
Faculty of Educational Studies  
Universiti Putra Malaysia  
(Member)

**Rosnaini Binti Mahmud, PhD**  
Senior Lecture  
Faculty of Educational Studies  
Universiti Malaysia Putra  
(Member)

---

**BUJANG BIN KIM HUAT, PhD**  
Professor and Dean  
School of Graduate Studies  
Universiti Putra Malaysia

Date:
DECLARATION

I declare that the thesis is my original work except for quotations and citations, which have been duly acknowledged. I also declare that it has not been previously and is not concurrently submitted for any other degree at Universiti Malaysia Putra or at any other institutions.

__________________________
MAHNAZ FALLAHI Khesht Masjedi

Date: 30 October 2012
# TABLE OF CONTENTS

DEDICATION i  
ABSTRACT ii  
ABSTRAK v  
ACKNOWLEDGEMENT viii  
APPROVAL x  
DECLARATION xii  
TABLE OF CONTENT xiii  
LIST OF TABLES xvi  
LIST OF FIGURES xix  
LIST OF ABBREVIATIONS xx

## CHAPTER

### 1 INTRODUCTION

1.0 Introduction 1  
1.1 Background of study 1  
1.2 Problem Statement 4  
1.3 Research objective 10  
1.4 Research question 11  
1.5 Significance of study 12  
1.6 Limitation of study 14  
1.7 Definition of terms 15  
1.7.1 Validation 16  
1.7.2 Anxiety 16  
1.7.3 Depression 17  
1.7.4 Negative affect 17  
1.7.5 Positive affect 17  
1.7.6 Physiological hyper arousals 18  
1.7.7 Secondary school 18  
1.8 Summary 18

### 2 REVIEW OF LITERATURE

2.0 Introduction 19  
2.1 Concept of emotional disorder 20  
2.2 Concepts of anxiety and depression 22  
2.2.1 Anxiety 22  
2.2.2 Depression 28  
2.3 Prevalence of anxiety and depression 34  
2.3.1 Prevalence of anxiety and depression in the world 35  
2.3.2 Prevalence of anxiety and depression in the Iran 38  
2.4 Theories related to Anxiety and Depression in this study 44  
2.4.1 Theories related to Anxiety 46  
2.4.2 Theories related to Depression 47
4.2.4 Criterion – related validity in pilot study 165
4.3 Phase III: Cross-validation 166
4.3.1 Description of the demographic characteristics of the respondent (Main study) 166
4.3.2 Confirmatory Factor Analysis (CFA) 168
4.3.3 Stage 1: Assessing Congeneric Model Validity for “anxiety” of A&D Inventory 170
4.3.4 Stage 2: Assessing Congeneric Model Validity for “depression” of A&D Inventory 177
4.3.5 Stage 3: Assessing Congeneric Model Validity for overall A&D Inventory 187
4.3.6 Stage 4: Assessing Measurement Model Validity for anxiety of A&D Inventory with the Beck Anxiety Inventory (BAI) and depression of A&D Inventory with the Beck depression Inventory (BDI) 191
4.3.7 Stage 5: Assessing Invariance of the CFA Measurement Model 194
4.3.8 Stage 6: Study Validation and Test-Retest 197
4.4 Summary 201

5 DISCUSSION OF FINDINGS
5.0 Introduction 202
5.1 Overview of the study 202
5.2 Section I: To determine the validity of A&D Inventory to measure anxiety and depression
5.2.1 CFA in Pilot study 206
5.2.2 EFA in Main study 207
5.2.3 Convergent and discriminant validity 209
5.2.4 Measurement Invariance 210
5.3 Section II: To determine the reliability of A&D Inventory to measure anxiety and depression
5.3.1 Internal consistency 210
5.3.2 Test-retest reliability 211
5.4 General Discussion, Basic Properties of the A&D Inventory 212
5.5 Review of Individual items
5.5.1 Anxiety 213
5.5.2 Depression 215
5.5.3 Utility of the A&D Inventory 221
5.5.4 Further Validation of the A&D Inventory 221
5.6 Section III
5.6.1 Limitation of the Study 222
5.6.2 Implications 222
5.6.3 Recommendations for Future Research 224
5.7 Summary 225

BIBLIOGRAPHY
APPENDICES
BIODATA OF STUDENT