Psychometric Properties of the Quick Inventory of Depressive Symptomatology (QIDS-C16) in Saudi Arabian Patients♦

الخصائص السيكومترية للمقياس المختصر لأعراض الاكتئاب (QIDS-C) على عينة من المرضى السعوديين

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ملخص:

المقياس المختصر لأعراض الاكتئاب (QIDS-C) هو أحد أكثر المقاييس شيوعا لتحديد شدة الاكتئاب، ويتم استخدامه على مرضى الاكتئاب في كل من التجارب السريرية والممارسة اليومية الروتينية. هذا المقياس ليس لديه نسخة عربية، لذلك هناك حاجة ماسة لترجمة المقياس الأصلي إلى اللغة العربية واختبار خصائصه النفسية. هدف الدراسة الحالية هو التحقق من الخصائص النفسية للمقياس QIDS-C16 (Rush et al., 1996) بعد ترجمته إلى اللغة العربية، وتطبيقه على عينة اكلينيكية تتكون من 120 مريضا سعوديا مصابين بالاكتئاب تتراوح أعمارهم بين 18 إلى 60 عاما (متوسط العمر = 35 سنة)، وتم التحقق من الخصائص السيكومترية للمقياس المترجم عن طريق عمل تحاليل الاتساق الداخلي (كرونباخ ألفا)، التحليل العاملي لعبارات المقياس، واختبارات الصدق والثبات وارتباطه بمقياس بيك للاكتئاب في نسخته العربية (عبد الخالق، 1998). أظهرت النتائج أن هناك علاقة ارتباطية قوية بين مقياس (QIDS-C) ومقياس بيك للاكتئاب (BDI) إضافة إلى التكافؤ بين المقياسين في درجات شدة الاكتئاب. تحاليل بيانات الصدق والثبات أيضا أظهرت نتائج واعدة (كرونباخ الفا= 0.87). إن نتائج النسخة العربية للمقياس أظهرت معايير صدق وثبات ممتازة بين مرضى الاكتئاب السعوديين. إن هذا المقياس هو أول مقياس مترجم إلى اللغة العربية ويمكن استخدامه من قبل متحدثين اللغة العربية لتقييم شدة الأعراض الاكتئابية على عينة من المرضى المصابين بالاكتئاب.

الكلمات المفتاحية: المقياس المختصر لأعراض الاكتئاب، مقياس بيك للاكتئاب (BDI)، QIDS، أعراض الاكتئاب.

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Abstract:

The Quick Inventory of Depressive Symptomatology (QIDS-C16) is currently one of the most frequently used scale for depression severity. It is used among depressed patients in both clinical trials and routine daily practice. The Inventory has no Arabic version, so there was a need for translating of the original scale and testing its psychometric properties. The aim of the current study is to evaluate the psychometric properties of the QIDS-C16 (©1986, 2000 UT Southwestern Medical Center, Dallas), on a clinical sample (n=120) of Saudi patients aged between 18 and 60, diagnosed with depression (mean age= 35 years old). We investigated the psychometric properties of the translated scale by examining (1) the internal consistency of the QIDS-C16, (2) the factor analysis, and (3) the concurrent validity with other depression instrument (i.e. Arabic version of BDI, Abedl-Khalek, 1998). Results of the Arabic version of the QIDS-C16 showed good internal consistency (α = 0.87). The QIDS-C16 correlated strongly with the BDI (r = 0.75). The Arabic version of the QIDS-C16 showed excellent reliability and validity parameters among Saudi depression patients. The QIDS-C The newly translated Arabic questionnaire is the first psychometrically tested tool that can be used on Arabic-speakers to assess the depressive symptoms severity.

Keywords: Quick Inventory of Depressive Symptomatology, QIDS, Beck Depression Inventory (BDI), Depressive symptoms.

1. Introduction

It is widely believed that depression is a serious psychiatric illness that has significant consequences for the family, social, and occupational functioning of the patient, and the wider community (Bromet et al., 2011). Therefore, measuring symptoms severity is very important in terms of guiding treatment selection, prescribing antidepressants, and providing better recommendations (Bauer et al., 2007).

Measuring symptoms severity requires the use of well standardized, valid, and reliable tool to provide an accurate assessment for symptoms severity. Previous studies have shown that most of the commonly used measures for depressive symptoms severity (e.g. PHQ-9) have some limitations related to their validity, therefore affecting their suitability for the use in clinical settings (Cameron et al., 2011, Reddy et al., 2010; Reilly et al., 2015). Other depression instruments the BDI for instance, contains large number of questions that may require considerable time to answer them. On the other hand, the QIDS-C16 is a short and easy instrument to use that provides an assessment for depressive symptoms (Rush et al., 2003).

The Quick Inventory of Depressive Symptomatology (QIDS) is a new, short instrument to measure the severity of depression symptoms, and it was derived from the 30 item Inventory of Depressive Symptomatology (IDS) developed by Rush and his collogues (2003), in which its items cover the atypical depression symptom features mentioned in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV) (American Psychiatric Association, 1994). The QIDS has two forms; Self-report (QIDS-SR16) and Clinician-rated (QIDS-C16) forms (Rush et al., 1996).

The QIDS has been widely used to monitor depressive symptoms in clinical practice (e.g. Lako et al., 2014; & Reilly et al., 2015). However, it has never been used to monitor symptoms of major depression among Saudi clinical sample. This is not least because there is no translated Arabic-version of QIDS-C, which has been identified to date. Consequently, translating the measurement into Arabic language, and testing its psychometric properties including validity, reliability and internal consistency is a requirement. It consists of 16 items that cover nine domains,

including having thoughts of committing suicide, self-criticism, general interest, psychomotor (agitation or retardation), the decrease or increase in (weight or appetite), energy or fatigue, sleep disruptions, concentration, and sad mood. (American Psychiatric Association, 2000). The scale measures symptoms severity (in previous seven days) and is rated on a scale from 0 to 3. The QIDS-16 is available in two versions, the first one is a self-report version (to be filled by the patients) and called (QIDS-SR16), and the other version is for clinician to fill it in (QIDS-C16) (Rush et al., 2003).

The QIDS-16 has been widely used on the international scale, being translated into many languages (Reilly et al., 2015), except for Arabic language. However, in order to assess the depressive symptoms severity in a Saudi Arabian clinical sample (i.e. Saudi patients diagnosed with depression), there is a need for a well-translated, valid and reliable Arabic version of the scale.

In order to conduct valid research, it is generally considered to be essential to use measures where reliability and validity is well established. Nevertheless, as this measure was originally developed in an English-speaking country, it is very important to translate it into Arabic, testing its psychometric properties including validity, reliability and internal consistency, and equivalence to the original English scale.

When translating a measurement tool from English to any other language, it is vital to establish its equivalence to the original source, in order to ensure that its validity has been achieved (Banville et al., 2000; & Sidani et al., 2010). Therefore, the present study will translate the QIDS-C16 following one of the systematic methodology for translating scales from a language to another, taking into account its accuracy and efficiency especially in cross-cultural validation.

1.1. Objectives of the Study

The main goal of the present study was to adapt well established measure, which assesses depressive symptoms severity, by translating the QIDS-C16 into Arabic language following a systematic translation processes, and testing its psychometric properties, validity, reliability, and equivalence to the original (in

terms of the concept) in a clinical sample (patients diagnosed with depression). Therefore, the present study aimed to answer the following questions:

1. Is the translated QIDS-C applicable to the Saudi culture?

2. Is the translated translated QIDS-C valid?

3. Is the translated translated QIDS-C reliable?

2. Materials and Methods

Patients were recruited from Major hospitals in Jeddah and Makkah city. Inclusion criteria: patients were included if they were 18 years old and over, had been diagnosed with depression (according to their GPs). The sample also included both newly and existing depressed patients in order to cover the whole depression spectrum (mild, moderate, severe, and very severe depression symptoms, even those in the remission stage).

The Beck Depression Inventory (BDI) was also used as a reference standard for the measuring the severity of depressive symptoms. The BDI has been chosen in our study because it has been widely and extensively used to evaluate depression severity in both normal and psychiatric populations, and it has been translated into several languages including Arabic language (Abedl-Khalek, 1998) and this version was used in this study. The BDI total score ranges from 0 to 63 in which higher scores indicate greater symptom severity. Scores can be classified into the following categories: 0 to13 indicate minimal depression, 14 to 19 indicate mild depression, 20 to 28 indicate moderate depression, and finally 29 to 63 indicate severe level of depression (Beck et al., 1988).

The QIDS-C is a 16-item scale, related to sleep, appetite /weight, and psychomotor symptoms. The score of each item ranges between 0 to 3, and the total score ranges from 0 (the lowest) to 27 (the highest). Moreover, the total score can then be categorised into 5 different group based on the symptom's severity (0-5 Normal, 6-10 Mild, 11-15 Moderate, 16-20 Severe, 21 and above Very Severe).

2.1. Procedure

All Patients were interviewed by the researcher and the consultant psychiatrist, and asked to answer the QIDS-C, in addition to Beck Depression Inventory (BDI), alongside their demographic information (age, gender, ethnicity…etc.).

2.2. Statistical analyses

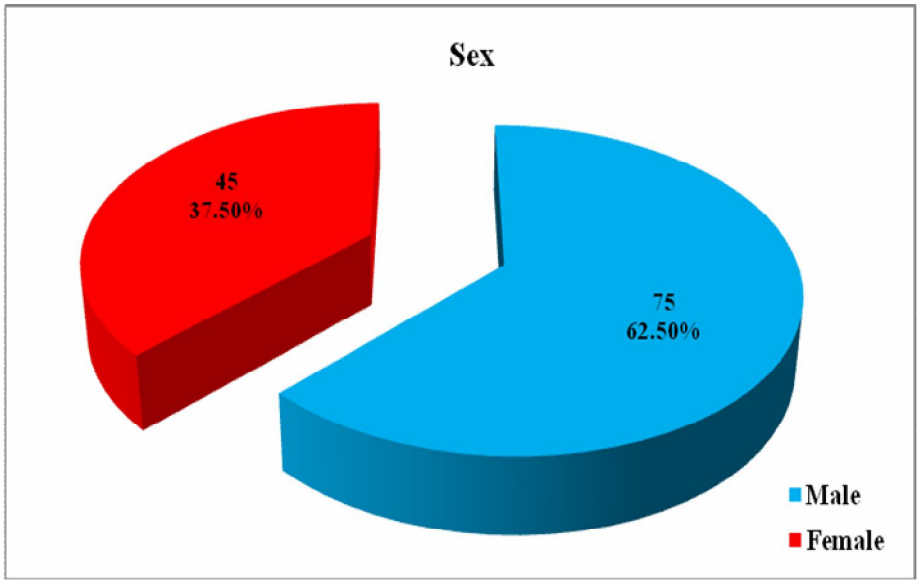
Collected data were assessed using a variety of statistical analyses. The demographic and clinical variables were described by using frequencies, percentages, means, and standard deviations. The correlation between the QIDS-C and BDI scores were also checked using Pearson Correlation Coefficient, and their equivalence were examined by using Chi-square test ($\chi 2$). In addition, KMO and Bartlett's Test were also applied to check the assessment quality, the validity of the data for factor analysis, and the adequacy of the sample size. Factor analysis were assessed, and Rotate Component Matrix were applied in order to check the correlations between the factors. In terms of the scale reliability, internal consistency was conducted by using Cronbach's alpha analysis.

Statistical Results of Quick Inventory of Depressive Symptomatology (QIDS-C)

Table (1)
Clinical and Demographic Characteristics of the sample.

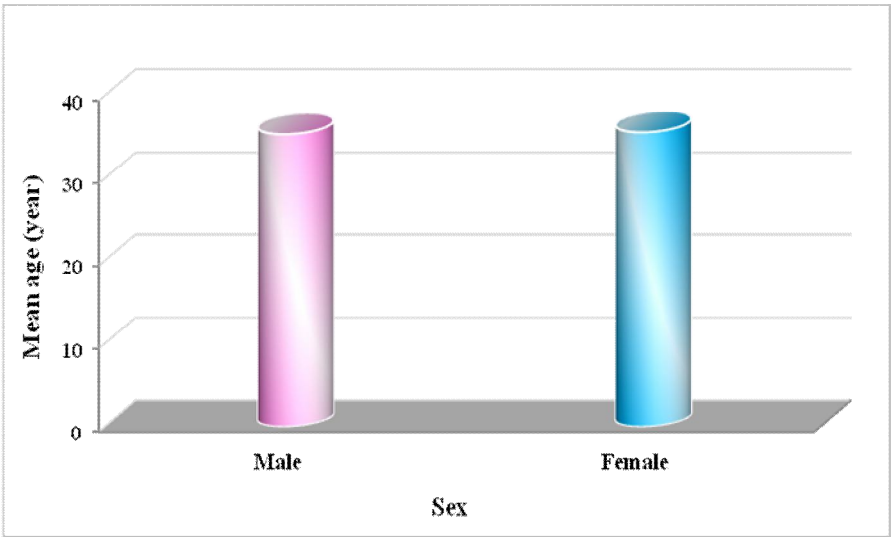
Characteristics	N	%	Mean ± SD
Sex			
Male	**75**	**%62.50**	**-**
Female	**45**	**%37.50**	**-**
Age			
Male	**-**	**-**	**35.35 ± 6.84**
Female	**-**	**-**	**35.58 ± 7.12**
C Interpretation-QIDS			
Very severe	**39**	**%32.50**	**-**
Severe	**53**	**%44.17**	**-**
Moderate	**28**	**%23.33**	**-**

Table (1) shows the data on clinical and demographic characteristics of the sample. The male percentage was (62.5%) with age average of (35,35), female represented (37.5%) with age average of (35.58). The results revealed that; (32.50%) of the sample suffer from extreme severe depression, (44.71%) suffer from severe depression and (23.33%) suffer from moderate depression. :below show that (3)and (2) ،(1)The graphs **.**



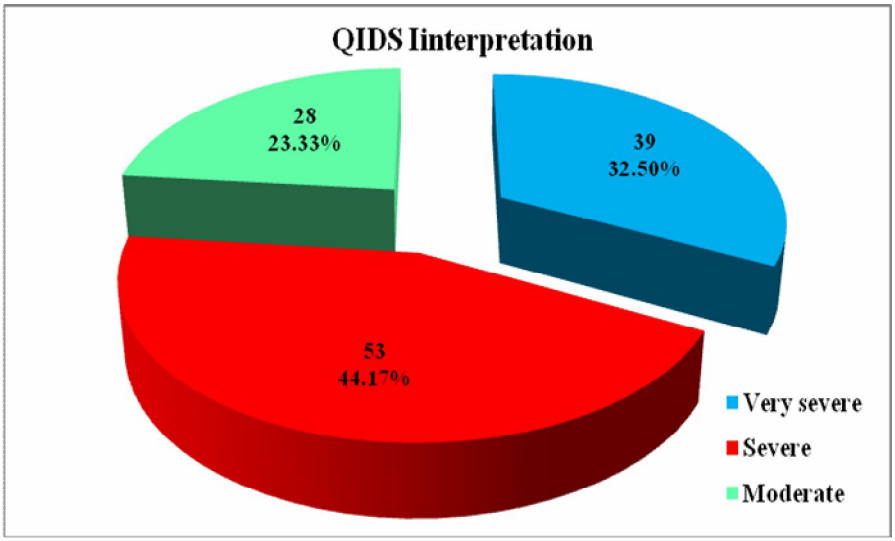
Graph (1)

Proportional Distribution of the sample by Gender



Graph (2)

The Sample's Average of Age by Gender.



Graph (3): Proportional Distribution of the sample by Depression Degree

Table (2)

The correlation between QIDS-C Interpretation and BDI Interpretation

Scales	N	Mean	*SD*	Correlation Coefficient	
				r	value-P
Score C Total-QIDS	120	33,42	6,46	0,75	0,01
BDI Total Score	120	35,43	8,86		

Table (2) shows that there is a correlation between QIDS-C scores and BDI scores; as the coefficient values was (0.75) and the significance level was (0.01). between That indicates the equivalence .the two scales

Table (3)

The equivalence between BDI and QIDS-C Scale in the degrees of depression.

Scales	Interpretation			square-Chi		
	Moderate	Severe	Very severe	χ^2	df	value-P
C-QIDS (%) n	(%23.33) 28	(%44.17) 53	(%32.50) 39	0.028	2	0.986
BDI (%) n	(%22.50) 27	(%45.00) 54	(%32.50) 39			

Table (3) shows the equivalence between Beck Inventory and QIDS-C Scale in the degrees of depression; as the value of χ^2 was (0.028) and the significance level was (0.986) which is greater than (0.05)

Table (4)

Results of Assurance of Assessment Quality (KMO and Bartlett's Test)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**0.769**
s Test of'Bartlett ricitySphe	**Square-Chi .Approx**	**2981.215**
	df	**120**
	.Sig	**0.000**

Table (4) shows that the value of Kaiser-Meyer-Olkin (KMO) was 0.769; it is an acceptable value as the minimum value is 0.6, and the significant level was 0.000. This indicates the excellence of the test, the validity of the data for factor Analysis and the adequacy of the sample size.

Furthermore, the total squares of all variables' contributions to each factor was assessed by the Factors Eigenvalue analysis. The first factors have greater Eigenvalue than the next ones. It is either greater than (whole 1), so it is accepted as a factor; otherwise to be rejected. Table (5) shows extraction of (4) factors have (Eigen Value) greater than (whole 1).

(5)Table

Rotated Component Matrix

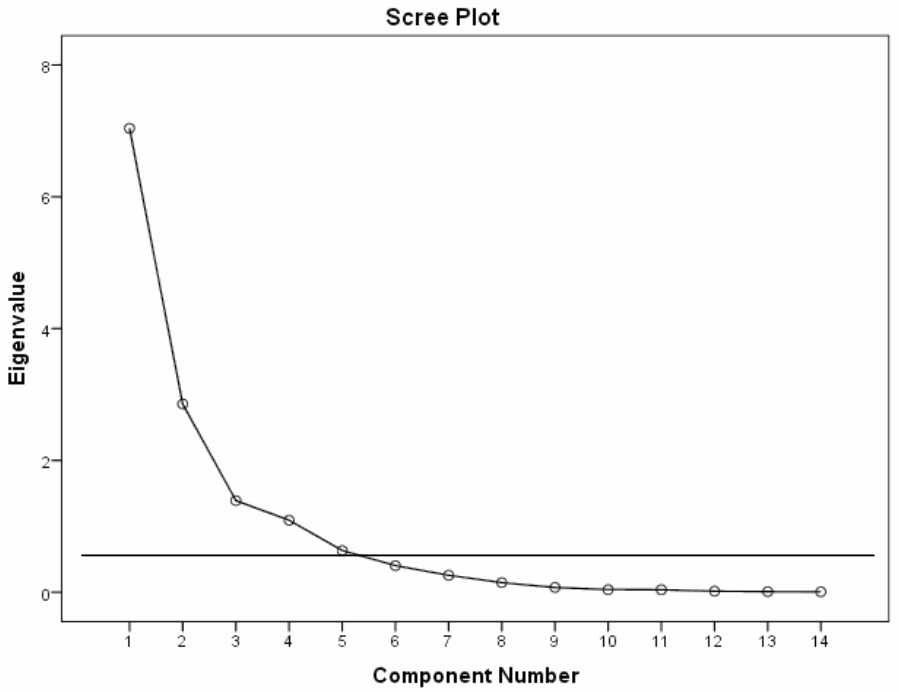
Items	**Component**			
	1	**2**	**3**	**4**
4Q_QIDS	**0.899**			
2Q_QIDS	**0.898**			
1Q_Sleep_QIDS	**0.888**	**0.303**		
3Q_QIDS	**0.888**			
14Q_QIDS	**0.812**			
10Q_QIDS	**0.712**		**0.321**	**0.386**
9Q_QIDS		**0.964**		
6Q_Weight_QIDS		**0.956**		

Items	Component			
	1	2	3	4
8Q_QIDS		0.954		
7Q_QIDS		0.941		
12Q_QIDS		0.539-	0.419-	0.358
15Q_Agitation_QIDS	0.420		0.759	
16Q_QIDS	0.320		0.731	
13Q_QIDS	0.405		0.706-	0.346-
5Q_QIDS	0.305		0.338	0.788
11Q_QIDS				0.764

Principal component analysis was used as the extraction method and varimax with Kaiser Normalization was used as rotation method. The rotation converged in three iterations.

Table (5) shows extraction of (4) factors have Eigen Value of greater than (whole 1). The analysis also concluded to the variation interpretations from the total variation of each individual factor, and the four factors shows the percentage of (83.68%); it is high. Eigen values are considered as a criterion of each component for its ability to find variation - the higher Eigen values, the more variation is discovered or revealed by the factor.

shows that (4)ph Gra:



Graph (4)

Factors by the Eigen Values

The findings of internal consistency test for the QIDS-C showed a good level of alpha for the overall scale indicating a good reliability of the translated scale (see Table 6 below).

(6)Table

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Factors	Item No	s alpha'Cronbach
Scale	16	0.87

Cronbach alpha for the four factors of five factors & the scale.

3. Results

3.1. Reliability analysis

The findings of internal consistency test for the QIDS-C obtained from this study showed a good level of alpha ($\alpha = 0.87$).

Furthermore, Cronbach's alpha was obtained for each factor and showed a variation in the level ranged from excellent (factor 1 and 2), to good (factor 3) levels, except for the last factor (factor 4). Despite that, Cronbach's alpha for the overall scale showed a good level (0.87) indicating a good internal consistency of the scale items in general.

3.2. Factor analysis

The factor analysis of the 16 items of the QIDS-C yielded four factors accounted for 83.68% of the variance. Findings confirmed the presence of 4 factors. Factor 1 consisted of 7 items which clearly represents items that constitute the sleep, concentration, and involvement. This can be named as (sleep, concentration, and involvement subscale). Factor 2 on the other hand, consisted of 4 items related to gain/loss appetite and gain/loss weight, in which they can be grouped into one subscale named as "appetite and weight subscale". In addition, factor 3 consisted of 3 items that constitute the psychomotor agitation and psychomotor slowing, and they can be under a subscale named "psychomotor subscale". Finally, factor 4 contained 3 items related to sad mood, outlook on self, and suicidal ideations. These items can be under a subscale named "sad mood, suicidal ideation, and self-esteem subscale".

3.3. Convergent validity

The QIDS-C demonstrated good convergent validity in which it correlated highly with BDI ($r = 0.75$), which gives an indication of the equivalence between the two scales. In terms of depression categories, findings confirmed the equivalence between QIDS-C and BDI.

4. Discussion

This study has sought to investigate the psychometric proprieties of the translated into Arabic version of the QIDS-C16 on a clinical sample of Saudi depressed patients. The Arabic

version of the QIDS-C exhibited good internal consistency. In more detail, reliability and internal consistency analysis showed very good to excellent alpha levels. These findings thus confirm that items of the Arabic scale are measuring similar constructs as the original English scale.

In addition, the QIDS-C correlated highly with the Arabic version of Beck Depression Inventory, and also in the categories of the depression severity, thus confirming its equivalence. In addition, our clinical sample represented a broad distribution of patients differing in their severity of depressive symptoms.

To our knowledge, this is the first study to translate the QIDS clinician version into Arabic language and assessing it on a Saudi clinical sample.

Our findings are in agreement with previous studies (Rush et al., 2003; Carmody et al., 2006; Rush et al., 2006; Brown et al., 2008; Doraiswamy et al., 2010; Rush et al., 2005) in which Cronbach's alpha obtained in a good level (ranged from 0.81 to 0.89). On the other hand, Our findings concur with previous studies in terms of factor structure, our study revealed a 4 factors while other studies revealed demonstrated a unidimensional factor structure in their investigations (Rush et al., 2003; Trivedi et al., 2004; Carmody et al., 2006; Brown et al., 2008; Doraiswamy et al., 2010; Bernstein et al., 2009).

In conclusion, the Arabic version of the QIDS-C showed excellent reliability and validity parameters among Saudi depression patients. The newly translated Arabic questionnaire is the first psychometrically tested tool that can be used on Arabic-speakers to assess the depressive symptoms severity.

The psychometric properties of the Arabic version of the QIDS-C were found to be generally strong in terms of internal consistency, and convergent validity, indicating its acceptability in the Saudi culture. However, findings should be taken with extra care due to differences in factor structure between the Arabic version and the original English version of the scale. Therefore, more studies are required to further investigate in depth the psychometric properties of the Arabic version of the QIDS-C.

References

- **Abdel-Khalek AM. Internal consistency of an Arabic Adaptation of the Beck Depression Inventory in four Arab countries.** ***Psychol Rep*****. 1998;82(1):264-266. doi:10.2466/pr0.1998.82.1.264.**
- **American Psychiatric Association (2000).** ***Diagnostic and Statistical Manual of Mental Disorders*****- Text Revision (4th ed.)***American Psychiatric Association* :DC ،Washington**.**
- **Banville, P., Desrosiers, P., & Genet-Volet, Y. (2000). Translating questionnaires and inventories using a cross-cultural translation technique.** *Journal of Teaching in Physical Education*،19 (3)، 374-387.
- **Bauer M, Bschor T, Pfennig A, Whybrow PC, Angst J, Versiani M. World Federation of Societies of Biological Psychiatry (WFSBP) guidelines for biological treatment of unipolar depressive disorders in primary care.** *World J Biol Psychiatry* 2007؛15:(2)87 **-104.**
- **Beck AT, Steer RA, Garbin MG. Psychometric properties of the Beck Depression Inventory: twenty-five years of evaluation.** *Clin Psychol Rev*1988؛77:8–100**.**
- **Bernstein IH, Wendt B, Nasr SJ, Rush AJ. Screening for major depression in private practice.** *Journal of Psychiatric Practice* 2009؛15:(2)87 **-94.**
- **Bromet E, Andrade LH, Hwang I, Sampson NA, Alonso J, de Girolamo G, et al. Cross- national epidemiology of DSM-IV major depressive episode.** ***BMC Med*** **2011; 9:90.**
- **Brown ES, Murray M, Carmody TJ, Kennard BD, Hughes CW, Khan DA, et al. The Quick Inventory of Depressive Symptomatology-Self-report: a psychometric evaluation in patients with asthma and major depressive disorder.** ***Annals of Allergy Asthma and Immunology*** **2008؛100:(5)433 -8.**
- **Cameron IM, Cardy A, Crawford JR, du Toit SW, Hay S, Lawton K, et al. Measuring depression severity in general practice: discriminatory performance of the PHQ-9, HADS-D, and BDI-II.** *Br J Gen Pract*2011؛61: 419-26**.**

- **Carmody TJ, Rush AJ, Bernstein IH, Brannan S, Husain MM, Trivedi MH. Making clinicians lives easier: guidance on use of the QIDS self-report in place of the MADRS. *J Affect Disord.* 2006;95(1-3):115-118. doi:10.1016/j.jad.2006.03.024.**
- **Lako, I.M., Wigman, J.T., Klaassen, R.M. *et al.* Psychometric properties of the self-report version of the Quick Inventory of Depressive Symptoms (QIDS-SR_{16}) questionnaire in patients with schizophrenia. *BMC Psychiatry* 2014; 14, 247.**
- **Doraiswamy PM, Bernstein IH, Rush AJ, et al. Diagnostic utility of the Quick Inventory of Depressive Symptomatology (QIDS-C16 and QIDS-SR16) in the elderly. *Acta Psychiatr Scand.* 2010;122(3):226-234. doi:10.1111/j.1600-0447.2009.01531.**
- **Reddy P, Philpot B, Ford D, Dunbar JA. Identification of depression in diabetes: the efficacy of PHQ-9 and HADS-D.** .45-239 :60؛2010Br J Gen Pract
- **Reddy, P., Philpot, B., Ford, D., & Dunbar, J. A. (2010). Identification of depression in diabetes: the efficacy of PHQ-9 and HADS-D. *The British journal of general practice : the journal of the Royal College of General Practitioners* 2010;60: 239-245.**
- **Reilly, T., MacGillivray, S., Reid, I., & Cameron, I. (2015). Psychometric properties of the 16-item Quick Inventory of Depressive Symptomatology: A systematic review and meta-analysis.** *Journal of Psychiatric Research **2015***; 140-132**.**
- **Rush AJ, Bernstein IH, Trivedi MH, Carmody TJ, Wisniewski S, Mundt JC. An evaluation of the quick inventory of depressive symptomatology and the hamilton rating scale for depression: a sequenced treatment alternatives to relieve depression trial report. *Biol Psychiatry*. 2006;59 (6): 493 - 501. doi:10.1016/j.biopsych.2005.08.022.**

- **Rush AJ, Trivedi MH, Carmody TJ, Ibrahim HH, Markowitz JC, Keitner GI. Self-reported depressive symptom measures: sensitivity to detecting change in a randomized, controlled trial of chronically depressed, nonpsychotic outpatients. *Neuropsychopharmacology*. 2005;30(2):405-416.**
- **Rush AJ, Trivedi MH, Ibrahim HM, et al. The 16-Item Quick Inventory of Depressive Symptomatology (QIDS), clinician rating (QIDS-C), and self-report (QIDS-SR): a psychometric evaluation in patients with chronic major depression. *Biol Psychiatry*. 2003;54(5):573-583. doi:10.1016/s0006-3223(02)01866-8.**
- **Rush AJ, Gullion CM, Basco MR, Jarrett RB, Trivedi MH. The Inventory of Depressive Symptomatology (IDS): psychometric properties. *Psychol Med* 1996; 26: 477–86.**
- **Sidani, S., Guruge, S., Miranda, J., Ford-Gilboe, M., &Varcoe, C. Cultural adaptation and translation of measures: an integrated method. *Research in Nursing & Health, 2010;* 33, 133–143.**
- **Trivedi, Madhukar & Rush, Augustus & Ibrahim, H & Carmody, Thomas & Biggs, M & Suppes, T & Crismon, M & Shores-Wilson, Kathy & Toprac, Marcia & Dennehy, Ellen & Witte, Bradley & Kashner, T. The Inventory of Depressive Symptomatology, Clinician Rating (IDS-C) and Self-Report (IDS-SR), and the Quick Inventory of Depressive Symptomatology, Clinician Rating (QIDS-C) and Self-Report (QIDS-SR) in public sector patients with mood disorders: A psychometric evaluation. *Psychological medicine*.2004; 34. 73-82.**
- **Vallerand, R. (1989), Toward a methodology of cross-cultural validation of psychology questionnaires implications for research. *،Journal of Canadian Psychology* ،(4)*30* 662-680.**