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**The Arabic Validation of the Hopkins Symptoms Checklist-25 against MINI
in a Disadvantaged Suburb of Beirut, Lebanon**

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Abstract

Validating instruments for clinical or research use has been one of the challenges of international psychology, especially when the use of such instruments can influence health care, delivery of services and possibly mental health policies. This paper seeks to validate the Arabic version of the Hopkins Symptoms Checklist-25 (HSCL-25) versus the Mini International Neuro-psychiatric Interview (MINI) among married women, aged 18-54 and residing in a disadvantaged southern suburb of Beirut, Lebanon. A convenience sample of 153 women were administered both the Arabic HSCL-25 and the MINI, through an interview. Trained interviewers delivered the HSCL-25, while clinical psychologists administered the MINI. Analyses included descriptive statistics and investigations of sensitivity and specificity. The instruments were highly correlated with one another. The cutoff score with the most appropriate balance between sensitivity and specificity was 2.1 for depression (when compared with Arabic validated Beck Depression Index) and 2.0 for anxiety (when compared with the Arabic validated State Trait. These results emphasize the importance of determining cutoff points in the populations where the questionnaires are used and show the high variability of these cutoff points across settings and countries.

Keywords: HSCL-25, Validation, Disadvantaged women, Beirut

Introduction

Depression is one of the most common mental health disorders worldwide. It contributes significantly to the global burden of disease and disability, due to its high prevalence and associated complications. According to the 2000 global burden of disease estimates, depression ranks as the fourth major cause of disease burden worldwide (Prince, Patel, Saxena, Maj, & Maselko, 2007; Mathers & Loncar, 2006). If not adequately recognized and properly treated, depression can lead to profound social and economic consequences, particularly in low-and-middle-income countries (World Health Organization [WHO], 2001; Lancet Global Mental Health Group, 2007). However, only a small proportion continues to be recognized in most low-and-middle income countries (Lopez, Mathers C, Ezzati, Jamison, & Murray, 2006.). Depression is found more prominently with populations that have undergone wars and political instabilities (Momartin et al., 2006; Jamil et al., 2002. Women in particular seem to be more psychologically affected by poverty, violence, lack of education, and discrimination (Stewart, Rondon, Damiani, & Honikman, 2001).

The Arab countries are no exception. In Lebanon, the 12 months prevalence of depression and anxiety among the general population are similar to those found in high to middle income countries, hence, the prevalence of Anxiety and Major Depressive Disorder were found to be 16,7 % and 12.6% respectively, in a general population sample of adults (Karam et al., 2008). Moreover, a systematic review of published epidemiological data on anxiety in the Arab countries revealed the need for national data to assess the magnitude of the problem (Tanios et al., 2009). Therefore, all the above factors support the need to conduct a randomized controlled trial with Lebanese women living in a disadvantaged suburb of Beirut, with the purpose of conducting a group intervention to reduce their levels of anxiety and depression. This, however, cannot be achieved without the use of validated scales that are brief and easy to administer. Such scales have made it easier to recognize and screen for anxiety and depression, leading eventually to a more effective treatment.

The 25-item version of the Hopkins Symptoms Checklist (HSCL-25) is a widely used tool for screening depression and anxiety, because of its brevity, simplicity, and its well-documented reliability and validity. Two scores are calculated: the total score is the average of all 25 items, while the depression score is the average of the 15 depression items. It has been consistently shown in several populations that the total score is highly correlated with severe emotional distress of unspecified diagnosis, and the depression score is correlated with major depression as defined by the Diagnostic and Statistical Manual of the American Psychiatric Association, IV Version (DSM-IV) (Hesbacher et al., 1980). HSCL-25 is also very flexible in its administration, where it can be either self administered or administered by health workers, under the supervision of a mental health professional such as a psychiatrist, psychologist or psychiatric nurse (Sandanger et al., 1999; Sandanger et al., 1998; Kaaya et al., 2002).

The HSCL-25 has been validated against several instruments such as: the Structured Clinical Interview for DSM-IV (SCID- IV) (Kaaya et al., 2003), the

Composite International Diagnostic for International Classification of Diseases 9 (CIDI I) (Sandanger et al. 1998), the Composite International Diagnostic for International Classification of Diseases 10 (CIDI II) (Sandanger et al. 1999), and Present State Examination (PSE 9) (Netlebladt et al., 1993). However, in these studies, different cutoff points were set to be culturally appropriate in order to enhance the psychometric properties of the HSCL-25.

The HSCL-25 has been translated into many languages: Arabic, Farsi, Serbo-Croatian, Russian, and English bilingual adaptations, and it has proved to be of value in cross-cultural settings in different countries (Kleijn et al., 2001). However, there have not been any investigations into the validity of this translation when used in the Arab world – the few studies conducted in this context focused on testing its reliability and internal consistency but none have attempted to investigate for appropriate cutoff values (Moussa et al., 2005; Afana et al., 2002).

The current study aims to validate the Hopkins Symptoms Checklist (HSCL-25) against a second diagnostic structured interview—namely, the MINI International Neuropsychiatric Interview (MINI), which was developed to diagnose ICD-10 and DSM IV psychiatric disorders. MINI is known to possess good psychometric properties. It has been translated into 43 different languages and used across 100 countries including some Arabic countries (Amorim et al., 2007). For example, when MINI was validated in the Moroccan Colloquial Arabic language, it showed a good concordance with experts' diagnoses. In this study, the inter-rater and test-retest reliability had kappa values greater than 0.80 and 0.90 respectively (Kadri et al., 2005). When validated against the Structured Clinical Interview for Diagnosis (SCID), kappa coefficients ranged between 0.65 and 0.85; sensitivity between 0.75 and 0.92; specificity between 0.90 and 0.99; positive predictive values (PPV) between 0.60 and 0.86; negative predictive values (NPV) between 0.92 and 0.99; and accuracy between 0.88 and 0.98 (De Azevedo et al., 2008). In another study, when validated against the Structured Clinical Interview for DSM-III-R (SCID-P), MINI proved to be a good psychiatric screening tool and required a shorter administration time (Otsubu et al., 2005). Moreover, the brevity of MINI and its acceptability to patients make it a potentially very useful research tool (Pinninti et al., 2003). Indeed, MINI has been used by many studies for the diagnosis of a range of psychiatric disorders such as: post-partum depression (Agoub et al., 2005), depression (Araya et al., 2005), suicidal ideation (Agoub et al., 2006), and substance abuse (Dorard et al., 2008).

As a result of its above mentioned psychometric properties and since it is considered among the simpler (yet as valid) diagnostic instruments existing in Arabic for depression and anxiety, MINI was used here to validate the HSCL-25. This validation process is new for the HSCL-25, since it has never been validated against MINI either internationally, or regionally (Middle East) or nationally (Lebanon). It also empowers researchers, health workers, and physicians to screen more easily and effectively patients with depression disorders. Hence, it will potentially allow for the circulation of an Arabic validated version not only in Lebanon, but also in the Arab world.

Method

Participants and Sampling

A convenience sample of 173 women was obtained through a ‘snowball’ approach-using word of mouth and telephone calls. The study was conducted at the Gawth Al Yateem Association located in Ma3amourah, a neighborhood in the southern suburb of Beirut, Lebanon. The sample was selected based on the following criteria:

- Inclusion criteria: Women who were aged 18-54, married, not pregnant, and living in the surrounding area of those who were approached.
- Exclusion criteria: Women with a history of mental health problems, specifically those with a current diagnosis of hypomanic episode, manic episode, alcohol and substance dependence, alcohol and substance abuse, medication abuse, psychotic disorder, bulimia nervosa and anorexia nervosa.

The selection of the participants in this study based on the above-indicated inclusion/exclusion criteria was intentional, as the main purpose of this HSCL-25 validation into Arabic was to be incorporated as part of a larger questionnaire, to be later administered in a community based randomized trial that aimed to assess the impact of a psychosocial intervention (of combined relaxation exercises and structured support group) to alleviate the symptoms of medically unexplained vaginal discharge by influencing low to moderate levels of common mental distress (anxiety and/or depression)-as already mentioned above.

The choice of currently married women, aged 18-49, residing in Maamourah was also intentional, as this was the target population of interest of the trial.

The study site: Maammourah is adjacent to a community known Hey el Selloum (the main target community of the trial), also located in the southern suburbs of Beirut, shares similar socio-economic characteristics to Maamourah, and is known to have suffered repeated war episodes and displacement.

Of the 173 selected women, 20 were excluded from the study for not meeting the inclusion or exclusion criteria, leaving 153 eligible women. All women with a previous history of probable depression or any of the above-noted mental health problems (although excluded) were referred for three *pro bono* follow up visits at the American University of Beirut Medical Center Outpatient Department, Psychiatry clinic.

Instruments and Translation procedure

The first 10 items of HSCL-25 are designed to screen for anxiety, whereas the remaining 15 screen for depression. Each item has an ordered categorical scale comprising of the following responses: (“Not at all”, “A little”, “Quite a bit”, “Extremely”). Scores are calculated as separate averages of depression and anxiety items, and a total score represents the mean of the total 25 items (Winokur et al., 1984). A cutoff point of 1.75 is usually recommended for symptomatic cases among both adult men and women (Winokur et al., 1984).

The HSCL-25 has been used to screen for depression, anxiety, and mental distress among different populations, ranging from elderly people, trauma victims, refugees, adolescents with type 1 diabetes to HIV infected women and postpartum women. (Frogdh et al., 2004; Lhewa et al., 2007; Hinton et al., 1994; Moussa et al., 2005; Kaaya et al., 2002; Kleijn et al., 2001). Most studies reported internal consistency of HSCL-25 exceeding 0.80 for both the depression and anxiety subscales (Kaaya et al., 2002; Lhewa et al., 2007). The HSCL depression score was shown to be well correlated with the major depression diagnoses as defined in the Diagnostic and Statistical Manual of the American Psychiatric Association, Fourth Edition (DSM-IV) (American Psychiatric Association [APA], 1994).

Prior to data collection, the HSCL-25 was professionally translated from English to Arabic, as per the World Health Organization procedures for translation and adaptation of instruments (WHO, 2007.). The translators are experts in the field, one psychiatrist and one clinical psychologist, fluent in both languages, were asked to translate independently the scale from English to Arabic. A meeting was held between the experts and the authors to go over the items with minor disagreements. These were resolved by consensus. The translation was pilot tested on a sample of fourteen students randomly selected at the American University of Beirut. The resulting changes were incorporated and another meeting was held between the experts and the authors to finalize the Arabic translation. Two other experts, also a psychiatrist and a psychologist were asked to do the back translation from Arabic to English. As a result a meeting was held to discuss the minor changes found through the back translation process. Both the final Arabic version and the English one were piloted on another small group of eleven students from the American University of Beirut to make sure items were comprehensible and equivalent. This process of translation is similar to the one suggested by Egisdottir, Gerstein, and Cinarbas (2008) in their article highlighting concerns about cross cultural validation of instruments and the steps needed for such a process.

The MINI was developed to diagnose ICD-10 and DSM IV psychiatric disorders. This is mainly because it is a shorter interview (ranging from 15 to approximately 21 minutes) when compared to the ICD and DSM (MINI Manual). Moreover, it can be administered by non-specialized trained interviewers, which makes it more feasible, especially when clinicians and specialists are not available to conduct such interviews for research purposes (Amorim et al, 2007). MINI has been noted to require less laborious training of the psychologists administering it; it is relatively shorter; and it has simpler means of administration. In Arabic, it has been validated against the Composite International Diagnostic Interview for ICD-10 (CIDI) in Arabic. The results indicate favorable psychometric properties, and as already indicated above (<https://www.medical-outcomes.com/index.php>).

Data Collection

Data were collected using face-to-face interviews conducted by social workers. This interview included gathering information about the socio-demographic characteristics of the woman and her spouse (such as age, education,

employment and income), and also administering the Hopkins Symptom Checklist-25 (HSCL-25).

The social workers were trained over two days. The first day revolved around training them about the different sections of the questionnaire and how to score the over all total scale and the subscales of HSCL-25. The second half of the first day trained the social workers about interviewing techniques. The second day of the training was mainly role-playing. Besides, they were given an interviewing manual that described the different parts of the questionnaire, and how it should be addressed. The manual also included a step-by-step guide on interviewing techniques.

Women were also interviewed by two clinical psychologists who conducted the MINI, which served as the gold standard for the present study. The psychologists were given a one-day training on MINI prior to data collection and were blinded to the results of the first interviews carried out by the social workers.

Prior to data collection, permission was obtained from the Gawth Al Yateem center (the main stakeholder on this study) to conduct the study. Ethical approval of the study protocol was also obtained from the AUB institutional review board (IRB). Verbal Informed consent was obtained from all participants, where the social worker read it to each women prior to the face to face interview- in a private separate room. The specifics of the informed consent revolved around ensuring to each woman to feel at ease to refuse or to accept to take part in this study, as well as to ask questions or clarifications. Women were also insured that refusal to take part in this study will not in any way interfere or hamper the woman from benefiting from the services provided at the center. Issues of confidentiality and willingness to stop the interview at anytime, even after consent, as well as the risks and the benefits associated with this study were also all clearly highlighted.

Data Management and Analysis

Sample characteristics including means and standard deviations for continuous variables and frequency distributions for categorical variables were computed. Prevalence of depression and anxiety according to results obtained from the MINI scale were calculated. Mean scores on the HSCL-25 and its depression and anxiety subscales were compared between those diagnosed with probable depression and anxiety respectively (according the psychologists' diagnosis made through MINI), using the independent t-test. Internal consistency for the Arabic HSCL-25 and its depression and anxiety subscales were assessed using Cronbach's alpha. The MINI diagnostic tool was used as the gold standard when assessing the validity of HSCL-25. Validity was assessed by computing sensitivity, specificity, positive and negative predictive values (PPV and NPV) for the different cutoffs of HSCL-25. In addition, receiver operating characteristic (ROC) curves for depression and anxiety were drawn up to determine the best cutoff for the HSCL-25, which represents a balance between high sensitivity and specificity.

Results

Data were collected on a total sample of 153 women. The women were all currently married (except for two who were widowed), not pregnant and between the ages of 18 and 54, with a mean age of 36.2 (standard deviation (SD) 8.5 years). The vast majority of the women had an educational level ranging between 6-12 grades with an average number of years of education of 8.7 (SD 3.6 years), similar to the husbands who had an average number of years of education of 8.3 (SD 4.1 years). The majority of women were housewives and 24% of them used to work previously; most of their husbands worked in non-professional jobs (see Table 1).

Table 1:

Description of study participants (n=153) by socio-demographic characteristics

Variable	Mean (SD)	N (%)
Age	36.2 (8.5); Min.=18 - Max.= 54	
Years of Education of Participant	8.7 (3.6); Min.=0 - Max.=16	
Years of Education of Husband	8.3 (4.1); Min.=0 - Max.=18	
Education		
Illiterate		5(3.3%)
Read and Write		3(2.0%)
Elementary		27(17.6%)
Intermediate		51(33.3%)
Secondary		22(14.4%)
Vocational Training		16(10.5%)
University/College		29(19.0%)
Education of Husband		
Illiterate		8(5.2%)
Read and Write		2(1.3%)
Elementary		39(25.5%)
Intermediate		45(29.4%)
Secondary		15(5.2%)
Vocational Training		18(11.8%)
University/College		22(14.4%)
Employment Status		
Currently working		39(25.5%)
Ex-worker		37(24.2%)
Never worked		77(50.3%)
Employment Status of Husband		
Currently working		141(92.2%)
Ex-worker		11(7.2%)
Never worked		1 (0.7%)
Type of Occupation		
Blue Collar		65(43.3%)
Shop Owner		31(20.7%)
General security, Army		12(8.0%)
Professional (nurse, teacher, engineer)		42(28.0%)

Using the MINI scale, 54 (35.3%) and 37 (24.2%) women were diagnosed with depression and anxiety respectively, with p-values (for value) < 0001. The MINI was used as a gold standard measurement and is able to discriminate between depression and anxiety disorders. Cronbach's alpha for assessing internal consistency reliability was 0.92 for the HSCL-25 and 0.88 and 0.85 for the depression and anxiety subscales respectively. The mean HSCL-25 score was 2.14 with an SD of 0.64. The mean HSCL-25 score, as well as that for the depression subscale and the anxiety subscale, were higher among women diagnosed with depression or anxiety as compared to those who were not (see Table 2). The HSCL-25 was compared to the MINI and used to differentiate between depression and anxiety disorders, which is emphasized with the new cut off score resulting from the data.

Table 2:

Cronbach's alpha and mean HSCL scores for the overall sample and for all subgroups according to diagnosis by MINI

	Cronbach's alpha	Overall sample (N=153) Mean(SD)	Diagnosis According to MINI		Diagnosis According to MINI	
			Probable Depressed (N=54) Mean(SD)	Not Depressed (N=99) Mean(SD)	Probable Anxiety (N=37) Mean(SD)	Without Anxiety (N=116) Mean(SD)
HSCL depression subscale	0.88	2.17 (0.68)*	2.72 (0.63)	1.88(.49)	-----	-----
HSCL anxiety subscale	0.85	2.09 (0.68)†	-----	-----	2.56 (0.66)	1.94 (0.62)
HSCL-25	0.91	2.14 (0.64)*†	2.64(0.60)	1.87(0.47)	2.62 (0.58)	1.99 (0.57)

* p-values <0.001 for the difference between those depressed and not depressed

† p-values <0.001 for the difference between those with anxiety and those without anxiety

Possible cutoff values for the HSCL-25 depression and anxiety subscales along with their sensitivities, specificities, NPVs, PPVs (Daniel, 2005), prevalence of depression or anxiety according to those cutoffs and kappa values for the agreement with diagnoses from the MINI scale are summarized in Tables 3 and 4 respectively. For HSCL-25 depression, we recommend the use of 2.10 as the cutoff value. This cutoff value showed a good balance between sensitivity and specificity, NPV and PPV. It also had the highest kappa value (0.47) among all

the cutoffs. The 2.25 cutoff value also had a good balance among the various considered measures but since the HSCL-25 is more likely to be used in practice as a screening tool we chose 2.10 for its slightly higher sensitivity (0.82 with 95% CI 0.69-0.90) and NPV (0.87 with 95% CI 0.78-0.93) In addition, the area under the ROC curve for the depression subscale was 0.85 (95% CI 0.78-0.91; $p < 0.001$), indicating a good ability to distinguish between possible cases and non cases of depression in this population.

Table 3:
Sensitivity, Specificity, PPV, NPV for the HSCL-25 depression subscale

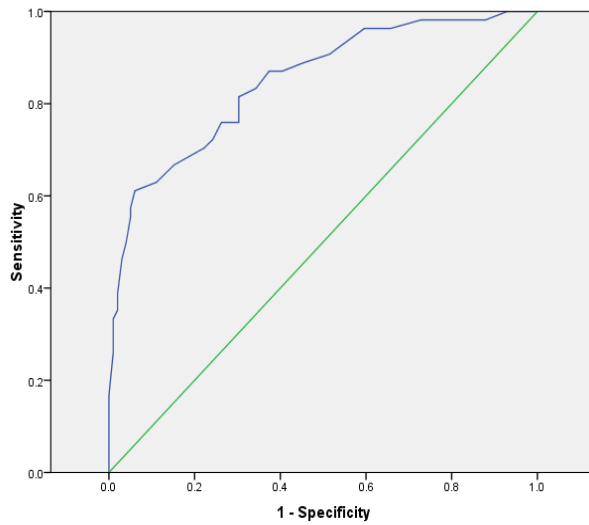
Cutoff	Prevalence of probable Depression	Sensitivity	Specificity	PPV	NPV	Kappa
1.75	0.65	0.91	0.49	0.49	0.91	0.33
1.90	0.57	0.87	0.60	0.54	0.89	0.41
2.00	0.55	0.87	0.63	0.56	0.90	0.44
2.10	0.48	0.82	0.70	0.60	0.87	0.47
2.25	0.44	0.76	0.74	0.61	0.85	0.47
2.30	0.41	0.72	0.76	0.62	0.83	0.46

Table 4:
Sensitivity, Specificity, PPV, NPV for the HSCL-25 Anxiety subscale

Cutoff	Prevalence of probable Anxiety	Sensitivity	Specificity	PPV	NPV	Kappa
1.75	0.61	0.89	0.48	0.35	0.93	0.25
1.90	0.56	0.89	0.54	0.38	0.94	0.30
2.00	0.52	0.84	0.59	0.39	0.92	0.31
2.10	0.47	0.78	0.62	0.40	0.90	0.30
2.15	0.43	0.70	0.66	0.39	0.87	0.28
2.25	0.38	0.60	0.69	0.38	0.84	0.24

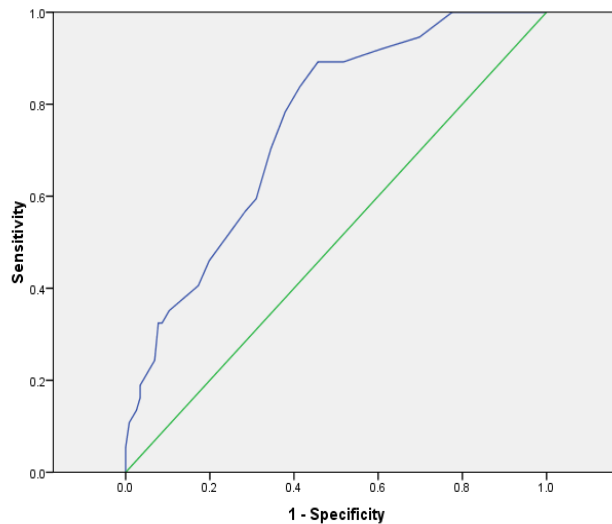
Regarding the HSCL anxiety subscale, the cutoff value of choice was 2.00, where it showed good balance among the various measures and the highest kappa value. For this cutoff sensitivity was good (0.84 with 95% CI 0.69-0.92) and NPV was high (0.92 with 95% CI of 0.83-0.97). The area under the ROC curve for the HSCL-25 anxiety subscale was 0.75 (95% CI 0.67-0.84; $p < 0.001$).

Figure 1
ROC curve for HSCL-Depression



Area Under Curve = 0.85

Figure 2
ROC Curve for HSCL-Anxiety



Area Under Curve = 0.75

Discussion

This study examined the psychometric properties of an Arabic version of HSCL-25. This Arabic translation of the HSCL-25 showed good psychometric properties. The results indicated that this scale can be useful for the screening of depression and anxiety among currently married women (aged 18-54) residing in similar disadvantaged settings in the Arab world.

Compared to other studies in the literature, the Arabic HSCL-25 demonstrated a good balance between sensitivity, specificity, NPV, and PPV balance. For example, when HSCL-25 (with cutoff point ≥ 1.55) was validated against SCID-I the results showed a sensitivity of 48% and a specificity of 87%. Yet, in that same study, the sensitivity among cases with co-morbid psychiatric disorders reached 100%. Furthermore, when HSCL-25 (cutoff points: 1.67 and 1.75 for symptomatic men and women respectively) was compared to CIDI I, the results demonstrated that HSCL-25 could only detect 46% of the CIDI I diagnosed cases (Sandanger et al., 1998), and HSCL-25 was able to pick up cases with more indicators than CIDI I. In another study, among HIV positive women in Tanzania-when comparing HSCL-25 to DSM IV SCID II the HSCL-25, the sensitivity and the specificity were about 89% and 80% respectively (Kaaya et al., 2002). When validated against PSE-9, a high specificity and sensitivity were observed, using a cutoff points ≥ 1.75 for screening symptomatic patients (Nettlebladt et. al, 1993).

The cutoff points recommended in this study to be used for the depression subscale and the anxiety subscale were 2.1 and 2.0 respectively. Although, this is above the recommended cutoff value of 1.75, it is not an unusual cutoff point indicating that participants endorse more depression items to reveal the presence of depression. A study conducted in Afghanistan recommended also the use of 2.25 as the cutoff point to screen symptomatic women and a 1.50 to screen symptomatic men when HSCL-25 was compared to the psychiatric interview-Self Reported questionnaire (SRQ-20) (another psychiatric screening interview, whose purpose was to serve as the gold standard) (Ventevogel et al., 2007). Moreover, this higher cutoff can be explained by the fact that the participants were females and of middle age, two out of three characteristics identified by Karam et al. (2008) as the main correlates of depression and anxiety in Lebanon. Karam et al. (2008) also found that war factors such as being a refugee, witnessing death or injuries, losing a loved one, being a civilian in a war torn area, and being directly exposed to explosions or toxic fumes were strongly associated with anxiety or depression. This applies to our sample, which is comprised of women who have been refugees since 1982, and have had many repeated war experiences throughout their lifetime. These repeated encounters may have contributed to the appearance of an anxiety or depressive disorder of a more severe nature, thus further explaining the high cutoff rate on the Arabic HSCL-25 scale.

The above explanations are further confirmed by a study conducted in Gaza by Afana et al. (2002) that found out when using the standard cutoff score of the Hopkins, only 11.6% of the cases identified by physicians as suffering from mental illness were matched with that cutoff score on the HSCL. However, a larger number of individuals diagnosed with anxiety or depression by physicians were left undetected on the Hopkins scale when the standard cutoff score was used.

Therefore, it is possible that with a higher cutoff point the association between the Hopkins scale and the physicians' diagnoses would have been higher, and the percentage of cases detected also higher. The sample in Gaza is also similar to the sample in Lebanon, in that the participants have also been victims of

war traumas as well as suffering from mental disorders – two factors which may require the use of a higher cutoff point on the Arabic Hopkins due to the severity of the symptoms reported by the subjects as a result of the exacerbating war circumstances. All of this highlights the importance of determining setting/culture specific cutoff points in the populations where the screening instruments will be used, which reflects the high variability of these cutoff points across settings and countries.

The findings of this study might not be generalized to all women in Lebanon. Further research in this area considering different women subpopulations and looking into the male population is recommended. Moreover, although the widths of the 95% confidence intervals are reasonable, higher sample size would have produced better precision. To our knowledge, this is the only study in the region on the HSCL-25, besides the Gaza study (which used a translated non-validated version of HSCL-25 to serve as the ‘Gold standard’). The advantage of our study over this latter study lies in the actual validation of HSCL-25 in both formal and colloquial Arabic. This offers flexibility in using the scale not only in the Lebanese context, but also in the Arab region. Another added value of our current study is that it offered the opportunity to validate both subscales of HSCL-25 (depression subscale and the anxiety subscale) against the MINI. It is the only study in the Arab region to have done so.

In conclusion, the Arabic version of the HSCL-25 proved to be a good instrument for screening of depression and anxiety among currently married (aged 18-54) socio-economically disadvantaged women. It is comparatively short, easier to administer (self-administered) and requires less time for administration (under ten minutes) than alternatives such as the gold standard applied here (the MINI).

We, therefore, recommend its use for screening of depression and anxiety in primary care settings, among large population health surveys or in research studies where inclusion criteria are heavily dependent on screening of common mental disorders.

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