Summary of Paper

The objective of this research paper is to validate the Malay version of Female Sexual Function Index (MVFSFI).

Methods & Results

This was a cross-sectional study conducted between March to June 2005. This study was conducted at one of the government primary health care clinic located in Bandar Tun Razak, Cheras (BTR) a busy urban area in Kuala Lumpur, the capital city of Malaysia. This study used a non-probability sampling (universal sampling) method. Due to limitation in time, resources and effort, all female patients who attended the BTR Primary Care Clinic during the study period that fulfilled the inclusion and exclusion criteria were included in this study.

Collection of data for this study was conducted in two stages. This was done by one of the authors (a medical doctor in her final year of master degree psychiatric training who was also trained to use the Diagnostic and Statistical Manual, DSM-IV and the Mini International Neuropsychiatric Interview, M.I.N.I). (i) First stage: All patients that fulfill the inclusion and exclusion criteria were given an explanation about the study and written consent obtained from them. They were assured of their anonymity and the confidentiality of the data obtained. A coding system was used to identify the subject. After the MVFSFI was completed, respondents were interviewed using the clinical interview, DSM-IV and M.I.N.I for exclusion of the other psychiatric illnesses. (ii) Second stage: Patient was asked to come again after about 2 to 4 weeks after the first interview to fill up the same MVFSFI for test-retest validity.

Translation of Female Sexual Function Index: The original (English version) of FSFI was translated into the Malay language by the first author (a trained psychosexual medicine specialist) who was also bilingual in both English and Malay. The back translation was done by two psychiatrists who were also bilingual in both languages. Both the original and back-translated version, were compared to determine accuracy of translation. The translated version was examined by a panel of psychiatrists to be used in the sample population without giving much difficulty in understanding it. No factor structure (factor
analysis) was done on the MVFSI as the expert committee (later referred as expert panel of psychiatrist) was satisfied with the conceptualization of sexual dysfunction for Malaysian women compared to their Western counterpart.

**Validity study of the MVFSFI:** Face validity of MVFSFI was tested during its pilot study. Twenty female staff nurses were given the MVFSFI for evaluation of its face validity. The MVFSFI were observed whether "on its face" it seems to be a good translation of the construct. The MVFSFI was presented to a panel of 4 psychiatrists in Psychiatry Department, National University of Malaysia Hospital. They included the first author (a senior consultant psychiatrist who received a formal training in psychosexual medicine) and 3 other senior consultant psychiatrists with at least 15 years clinical experience in general psychiatry. The sensitivity and specificity of MVFSFI against DSM-IV, as the “gold standard” instrument. The total scores of the MVFSFI were calculated by summing all the scores of all items in the scale. The scores of each domain were calculated by summing the score of each item in the domains. The minimum total score was 4 and the maximum was 95. Multiple cut off scores from the MVFSFI scoring were compared against DSM-IV diagnosis to determine the most sensitive and specific cut off score for the questionnaire to pick up female sexual dysfunction. Similar procedure was carried out for each domain. Discriminant validity was also done but not shown in the text.

Frequency of each diagnosis in the sample, MVFSI cut-off scores vs. DSM-IV clinical diagnosis are shown on table 2.

**Table 1. The frequency of DSM-IV clinical diagnosis of sexual dysfunction (gold standard) in women compared to MVFSFI.**

<table>
<thead>
<tr>
<th>DSM-IV clinical diagnosis</th>
<th>Normal</th>
<th>Sexual dysfunction</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>MVFSFI (scores &gt; 55)</td>
<td>161</td>
<td>1</td>
<td>162</td>
</tr>
<tr>
<td>Sexual dysfunction (scores ≤ 55)</td>
<td>2</td>
<td>66</td>
<td>68</td>
</tr>
<tr>
<td>Total</td>
<td>163</td>
<td>67</td>
<td>230</td>
</tr>
</tbody>
</table>
Table 2. Sensitivity and specificity of MVFSFI total score based on Receiver Operating Characteristic (ROC) curve.

<table>
<thead>
<tr>
<th>MVFSFI SCORES</th>
<th>SENSITIVITY</th>
<th>SPECIFICITY</th>
<th>1-SPECIFICITY</th>
<th>AUC</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>0.76</td>
<td>1</td>
<td>0</td>
<td>0.619</td>
</tr>
<tr>
<td>TOTAL</td>
<td>40</td>
<td>0.82</td>
<td>1</td>
<td>0.739</td>
</tr>
<tr>
<td>SCORES</td>
<td>45</td>
<td>0.9</td>
<td>1</td>
<td>0.866</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>0.94</td>
<td>1</td>
<td>0.925</td>
</tr>
<tr>
<td></td>
<td>55</td>
<td>0.99</td>
<td>0.97</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td>60</td>
<td>1</td>
<td>0.8</td>
<td>0.2</td>
</tr>
<tr>
<td></td>
<td>65</td>
<td>1</td>
<td>0.59</td>
<td>0.41</td>
</tr>
<tr>
<td></td>
<td>70</td>
<td>1</td>
<td>0.47</td>
<td>0.53</td>
</tr>
</tbody>
</table>

(AUC = area under the curve)

The table 2 above shows the calculation of sensitivity and specificity of MVFSFI toward the diagnosis of female sexual disorder with DSM-IV. The sensitivity and specificity values above were plotted using ROC curve as shown in figure 1.

Figure 1. ROC curve for total score of MVFSI
Answer ALL Questions. Please bring along your calculator. (overall 20 marks)

1. In this paper, it is assumed that the MVFSI is a valid means of identifying sexual dysfunction among Malaysian women.
   (a) What is the definition of validity and reliability of a study?

   Validity of a study = ability of the study to measure what it supposed to measure;  
   reliability of a study =  ability of the study to replicate the tests and giving  
   similar results.

   (1 mark)

   (b) Face and content validity was done in this study. What is the meaning of the face and content validity?

   Face validity concerns whether the questionnaire (MVFSFI) appears to be measuring what it says it does on “face value”; and

   content validity of the questionnaire refers to the accuracy with which the questions adequately represent the qualities they are presumed to measure and these was established by referring to an expert committee.

   (2 marks)

2. The researchers used sensitivity and specificity of the psychometric tool, MVFSI against “gold-standard” interview of DSM-IV. What is the definition of sensitivity and specificity of a psychometric tool?

   Sensitivity = ability to detect true positive (TP) rate; and
   Specificity = ability to detect true negative (TN) rate.

   (2 marks)

3. Based on table 1,
   (a) calculate the true positive and true negative rate for MVFSI.

   TP rate = Sensitivity = 66/67 x 100% = 98.5%; and
   TN rate = Specificity = 161/163 x 100% = 98.7%.

   (2 marks)

   (b) calculate the positive predictive value (PPV) of MVFSI and explain the meaning of the given PPV.

   Positive predictive value (PPV) of MVFSI = 66/67 x 100% = 97.0%  
   ie. 97% of those women scoring positive on MVFSFI will actually have female sexual dysfunction.

   (2 marks)
(c) what would happen to PPV if the prevalence of sexual dysfunction in women was studied in an inpatient psychiatric settings (eg.hospital) rather in a general community? Explain.

PPV value would increase (PPV was dependence on the prevalence of a disease, ie. as the prevalence in an inpatient psychiatric was rather lower if to be compared to the community survey, and the PPV value would also reduce).

(d) calculate the likelihood ratio of a positive test ($LR^{+ve}$) on MVSFI and explain the meaning of $LR^{+ve}$. [Formula of $LR^{+ve} = \frac{\text{sensitivity}}{1 - \text{specificity}}$]

\[
\text{Likelihood ratio of a positive test (LR}^{+ve} \text{) on MVSFI:} \\
LR^{+ve} = \frac{0.985}{1-0.987} = \frac{0.985}{0.013} = 757 \\
\text{ie. a positive result is 757 times or more likely to be found in a women with the sexual dysfunction rather than one without.}
\]

(e) given the prevalence of the FSD is 30%, calculate the post-test odd ratio (for positive likelihood of the MVFSI).

[Post-test odd ratio (for positive likelihood of the MVFSI) = pre-test odd ratio x LR$^{+ve}$.]

\[
\text{Prevalence, } P = \frac{0dds}{1 + 0dds} \text{ and } 0dds = P/ 1-P \\
=> \text{The prevalence = 30%, then the pretest odd = } \frac{0.3}{1-0.3} = \frac{0.3}{0.7} = \frac{3}{7}; \\
\text{Then the post-test odd ratio (+ve test) = } \frac{3}{7} \times 757 = 324.
\]

4. (a) Based on table 2, what will happen if you choose the total score of MVFSI as 35 instead of 55 or 65 (with sensitivity of 0.76 and AUC = 0.619) as a purpose to detect caseness of FSD?

If I choose the total score of MVFSI as 35 instead of 55 (with sensitivity of 0.76 and AUC = 0.619), then MVFSI would be very sensitive less specific for sexual dysfunction in Malaysian women and it serves as screening rather than diagnosing tool.

(2 marks)
(a) Based on table 2 and figure 1, if you are applying the MVFSI to identify sexual dysfunction among Malaysian women in primary care setting, which cut-off point would predict best could you select?

55. (2 marks)

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