MENTAL HEALTH STATUS OF WOMEN ATTENDING A GOVERNMENT PRIMARY CARE CLINIC IN THE STATE OF SELANGOR, MALAYSIA

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ABSTRACT

Introduction

This thesis was conducted because a need was identified for comprehensive studies on mental health status among women in Malaysia. **Objectives:** There were two main objectives. The first was to determine the prevalence of depression and anxiety among women attending a government primary care clinic, and investigate the association with socio demographic factors, medical, obstetrics and gynaecology history, stressful life events, and domestic violence. The second was to validate questionnaires on depression and anxiety among Malay speaking participants.

Methodology

This thesis was conducted in two parts (Part 1 and 2) based on its two main objectives. **Setting:** The Seri Kembangan Health Clinic (KKSK) from the urban district of Petaling, in the state of Selangor, Malaysia was selected. **Study design:** This was a cross sectional study. **Sampling method:** Simple random sampling was used to select the clinic (KKSK). **Participant selection:** For Part 1, consecutive adult female patients attending KKSK during the data collection period and fulfilling the selection criteria were invited to participate. For Part 2, systematic weighted random sampling was used to select participants who had completed the questionnaires in Part 1 of the thesis. Selection was based on scores from the 9-item Patient Health Questionnaire [PHQ-9] and the 7-item Generalized Anxiety Disorder questionnaire [GAD-7]. **Study instruments:** For Part 1, participants completed self-administered questionnaires (including the 12-item General Health Questionnaire [GHQ-12], PHQ-9 and GAD-7). The GHQ-12 was used to determine poor mental health status, while the PHQ-9 and GAD-7 were used to determine depression and anxiety, respectively. Part 2 involved diagnostic interviews by the principal investigator using the Composite International Diagnostic Interview (CIDI) as the reference standard to validate the PHQ-9 and GAD-7. **Data collection:** Data was collected from 10th December 2008 to 30th January 2009.

Results

**Response rate:** Eight-hundred-and-ninety-five patients participated in Part 1 (895/1023, response rate 87.5%); while 151 were further interviewed for Part 2 (151/156, response rate 96.8%). **Data analysis:** Data analysis was based on complete questionnaires; 845 for
Part 1 and 146 for Part 2. **Results:** Findings from Part 1 showed that the prevalence of poor mental health status, depression, anxiety, and co-morbidity (co-existing depression and anxiety) was 17.5% (GHQ-12), 12.1% (PHQ-9), 7.8% (GAD-7) and 5.8% (PHQ-9 and GAD-7), respectively. Multiple logistic regression analysis found that certain stressful life events were significantly associated with depression, anxiety and co-morbidity (p<0.05). The emotional aspect of domestic violence was found to be a main predicting factor for anxiety and co-morbidity (p<0.05). Findings from Part 2 showed that the PHQ-9 had a sensitivity of 87.1% (95% confidence interval 71.1% to 94.9%) and a specificity of 81.7% (73.7% to 87.7%). The GAD-7 had a sensitivity of 76.3% (60.8% to 87.0%) and a specificity of 94.4% (88.4% to 97.4%).

**Discussion and Conclusion**

The prevalence of depression and anxiety found in this thesis is similar to other countries. The results on domestic violence are important findings in this thesis, as this is an area which has not been investigated in Malaysia. The Malay versions of the PHQ-9 and GAD-7 were found to be valid and reliable case-finding instruments for depression and anxiety. The next step will be to explore issues on domestic violence and to disseminate the validated case-finding instruments into regular practice in Malaysian primary care clinics.
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LIST OF ABBREVIATIONS

AAS  Abuse assessment screen
AKUADS  Aga Khan University anxiety and depression scale
APA  American Psychiatric Association
ARROW  Asian-Pacific resource and research centre for women
BDI  Beck depression inventory
BPH  Benign prostatic hyperplasia
CAI  Computer assisted interview
CAPS  Clinician-administered PTSD scale
CGI-S  Clinical global impression-severity scale
CES-D  Centre for epidemiological studies depression
CI  Confidence interval
CIDI  Composite international diagnostic interview
CIDI-PC  Composite international diagnostic interview for primary care
CIDI-TRC  Composite international diagnostic interview training and research centre
CISR  Revised clinical interview schedule
DALY  Total number of disability-adjusted life years
DIS  Diagnostic interview schedule
DSM-III  Diagnostic and statistical manual of mental disorders, third edition
DSM-IV  Diagnostic and statistical manual of mental disorders, fourth edition
DSM-IV-TR  Diagnostic and statistical manual of mental disorders, fourth edition, text revision
DOS  Department of Statistics
DSQ  Depression screening questionnaire
EPDS  Edinburg postnatal depression scale
EPU  Economy Planning Unit
FIP  Functional illness in primary care
FMS  Family medicine specialist (Malaysian term for “Family Physician”)
FP  Family Physician
GAD  Generalised anxiety disorder
GAD-7  Generalised anxiety disorder (seven item screening questionnaire for forms of anxiety)
GBD  Global burden of disease and injury study
GDP  Gross domestic product
GHQ  General health questionnaire
GHQ-12 General health questionnaire (twelve item screening questionnaire for poor mental health status)
HADS Hamilton anxiety depression scale
HAM-D Hamilton rating scale for depression
HARK Four item screening questionnaire for domestic violence
HDRS Hamilton depression rating scale
ICD International classification of disease
ICPE International consortium in psychiatric epidemiology
IPH Institute of Public Health
IPV Intimate partner violence
KKSK Klinik Kesihatan Seri Kembangan” (Seri Kembangan health clinic)
LR Likelihood ratio
LUTS Lower urinary tract infection
MaGPIe Mental health and general practice investigation
MBODI Malaysian burden of disease and injury
MHP Mental health professional
MINI Mini international neuropsychiatric interview
MMHS Malaysian mental health survey
MOH Ministry of Health
MOS Medical outcomes study
NHMS National health and morbidity survey
NPV Negative predictive value
OR Odds ratio
PCL Post-traumatic checklist
PDS Post-traumatic stress diagnostic scale
PHQ Patient health questionnaire
PHQ-9 Patient health questionnaire (nine item screening questionnaire for depression)
PI Principal investigator
PMDD Pre-menstrual dysphoric disorder
PPV Positive predictive value
PRIME-MD Primary care evaluation of mental disorders
PSE Present state examination
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTSD</td>
<td>Post traumatic stress disorder</td>
</tr>
<tr>
<td>RA</td>
<td>Research assistant</td>
</tr>
<tr>
<td>RUGS</td>
<td>Research university grant scheme</td>
</tr>
<tr>
<td>SCL-8</td>
<td>Symptom check list (eight item screening questionnaire)</td>
</tr>
<tr>
<td>SDS</td>
<td>Social disability schedule</td>
</tr>
<tr>
<td>SCAN</td>
<td>Schedules for clinical assessment in neuropsychiatry</td>
</tr>
<tr>
<td>SCID</td>
<td>Structured clinical interview for DSM-III-R</td>
</tr>
<tr>
<td>SDDS-PC</td>
<td>Symptom-driven diagnostic system for primary care</td>
</tr>
<tr>
<td>SF-20</td>
<td>Short-form general health survey</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical package for social sciences</td>
</tr>
<tr>
<td>STARD</td>
<td>Standards for the reporting of diagnostic accuracy studies</td>
</tr>
<tr>
<td>STAI</td>
<td>State-trait anxiety inventory</td>
</tr>
<tr>
<td>SWAN</td>
<td>Study of women’s health across the nation</td>
</tr>
<tr>
<td>TURP</td>
<td>Transurethral resection of the prostate</td>
</tr>
<tr>
<td>UPEN</td>
<td>“Unit Pembangunan Negeri” (State Development Unit)</td>
</tr>
<tr>
<td>UPM</td>
<td>Universiti Putra Malaysia</td>
</tr>
<tr>
<td>WHI-OS</td>
<td>Women’s health initiative observational study</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organisation</td>
</tr>
<tr>
<td>WMH</td>
<td>World mental health</td>
</tr>
<tr>
<td>YLD</td>
<td>Years lived with disability</td>
</tr>
</tbody>
</table>
GLOSSARY

These are definition of terms used in this thesis.

Anxiety:

Anxiety in this thesis is based on GAD-7 scores of 8 and above. All analyses for associations with anxiety in this thesis are based on these scores. Refer to the term “GAD-7” in the list of abbreviations.

Adult:

The term adult in this thesis indicates a person who is fully grown and developed. In Malaysia, an adult is defined as a person aged 18 years old and above.

Bumiputera:

The term “Bumiputera” refers to the natives of Malaysia, which consist of people from the Malay, Javanese, Bugis, Minang and other indigenous ethnic groups (see “other Bumiputera”).

Chinese:

The word “Chinese” in this thesis is used to describe a person of Chinese descent.

Chronic disease:

Chronic disease in this thesis means a disease / illness which has a long course, and needs treatment continuously, or for a prolonged duration.

Co-morbidity:

Co-morbidity in this thesis is based on PHQ-9 scores of 10 and above, as well as GAD-7 scores of 8 and above. Therefore, the term “co-morbidity” is used to describe participants with both depression and anxiety, based on the scores above.

Depression:

Depression in this thesis is based on PHQ-9 scores of 10 and above (simple scoring method). All analyses for associations with depression in this thesis are based on this simple scoring method. Refer to the term “PHQ-9” in the list of abbreviations.
- **Depression based on PHQ-9 criteria:**

There are two methods of scoring for depression based on the PHQ-9 criteria (simple scoring and complex scoring). In this thesis, the simple scoring method is used to determine depression among the participants (i.e. depression = PHQ-9 scores \( \geq 10 \)). Based on the complex method, major depression is diagnosed if 5 or more of the 9 depressive symptom criteria had been present at least “more than half the days” in the past 2 weeks and 1 of the symptoms was depressed mood or anhedonia. The complex scoring method was used in this thesis to determine the prevalence of major depression. This prevalence was then compared to the prevalence of depression detected from the simple scoring method, to assess whether there was a significant difference in the detection of depression based on the different scoring methods.

**Diagnostic tests:**

Properties of a diagnostic or screening test include sensitivity, specificity, predictive values and likelihood ratios. These properties are statistics for summarising diagnostic accuracy of the test. Listed below is a list of terms for diagnostic tests used in this thesis:

<table>
<thead>
<tr>
<th>Disease (determined by “gold standard”)</th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Test</td>
<td>True Positive</td>
<td>False Positive (Type I error)</td>
</tr>
<tr>
<td>(Type II error)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative Test</td>
<td>False Negative (Type II error)</td>
<td>True Negative</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>↓ Sensitivity</td>
<td>↓ Specificity</td>
</tr>
</tbody>
</table>

- **True Positive (TP):**
  
  TP is the number of people who tested positive and have the disease

- **True Negative (TN):**
  
  TN is the number of people who tested negative and do not have the disease.

- **False Positive (FP):**

  FP is the number of people who tested positive and do not have the disease.

- **False Negative (FN):**

  FN is the number of people who tested negative but have the disease.
• **Sensitivity:**
Sensitivity is the ability of the test to correctly detect the disease (true positive rate). Sensitivity is the number of people with the disease who have a positive test divided by the number with the disease. Sensitivity = TP/(TP+FN).

• **Specificity:**
Specificity is the ability of the test to correctly identify people who do not have the disease (true negative rate). Specificity is the number of people without the disease who have a negative test divided by the number of people without the disease. Specificity = TN/(TN+FP).

• **Predictive value:**
A predictive value is the probability of the disease given the test result. It is determined by the sensitivity and specificity of the test, as well as by the prevalence of the disease in the population being tested.

• **Positive predictive value (PPV):**
PPV is the proportion of people with a positive test who have the disease divided by all the people with a positive test. PPV = TP/TP+FP.

• **Negative predictive value (NPV):**
NPV is the proportion of people with a negative test who do not have the disease divided by all the people with a negative test. NPV=TN/TN+FN.

• **Likelihood ratio (LR):**
The LR for a particular test result is defined as the probability of that test result in the presence of disease divided by the probability of the result in the absence of disease. A LR of greater than 1 indicates that the test result is associated with the presence of the disease, and a LR less than 1 indicates that the test result is associated with the absence of disease. The LR incorporates both the sensitivity and specificity of the test and provides a direct estimate of how much a test result will change the odds of having a disease.

• **Positive LR:**
The LR for a positive result (LR+) reflects the odds of the disease increasing when a test is positive.

• **Negative LR:**
The LR for a negative result (LR-) reflects the odds of the disease decreasing when a test is negative.
• **Confidence interval:**
  A confidence interval (CI) estimate of a parameter consists of an interval of numbers obtained from a point estimate of the parameter and a percentage that specifies that the interval contains the true value of the parameter. For example, a 95% CI is a range of values about which it is 95% sure that it contains the quantity of interest.

**Domestic violence (DV):**

DV also known as “intimate partner violence” (IPV) means partner abuse (between a male and female partner), most commonly perpetrated by the male partner. It includes physical, sexual and emotional violence.

**Elderly:**

In Malaysia, an elderly is defined as a person aged 60 years old and above.

**Ethnic:**

Ethnic relates to a group of people who have a common national or cultural tradition.

**Expert committee:**

The expert committee consists of a team of psychiatrists, family medicine specialists and public health specialists (including the principal investigator, supervisory and advisory board members) who reviewed the questionnaires used in this thesis.

**Generalised anxiety disorder (GAD):**

GAD is a disorder where the patient presents with persistent anxiety and worry that is out of proportion to actual events or circumstances.

**Indian:**

The word “Indian” in this thesis describes a person of Indian descent.

**Intimate partner violence (IPV):**

Refer to “domestic violence”.

**Malay:**

The term “Malay” in this thesis refers to the main ethnic group of people inhabiting Malaysia and Indonesia. “Malay” also refers to the language of the Malay people.
**Mental health status:**

Good mental health is a state of well-being in which the individual realises his or her own abilities, is able to cope with the normal stress of life, as well as can work productively and fruitfully to contribute to his or her community. Poor mental health status in this thesis is determined by GHQ-12 scores of 3 and above. Refer to the term “GHQ-12” in the list of abbreviations.

**Obstetrics and gynaecology history:**

- **Infertility:**
  Infertility means problems in getting pregnant for more than 1 year; whether primary or secondary.

- **Menopause:**
  Menopause means cessation of menstruation.

- **Miscarriage:**
  Miscarriage means losing a pregnancy after 6 weeks’ of gestation.

- **Pre-menstrual symptoms:**
  Pre-menstrual symptoms include symptoms of abdominal discomfort or pain, breast engorgement and tenderness before and at the beginning of menstruation.

- **Pre-menopause:**
  Pre-menopause means that the participant had mensus in the past 3 months with no change in regularity.

- **Early peri-menopause:**
  Early peri-menopause means that the participant had mensus in the past 3 months with change in regularity.

- **Late peri-menopause:**
  Late peri-menopause means that the participant did not have mensus in the past 3 months, but had some menstrual bleeding within the past 12 months.

- **Post menopause:**
  Post-menopause means that the participant did not have any mensus in the past 12 months.
Primary care:

Primary care is the most accessible form of health care for the population. This thesis was conducted in a government primary care clinic, which is a clinic that is funded fully by the government of Malaysia.

Odds Ratio (OR):

Odds is the ratio of probabilities. OR is defined as the odds that a case is exposed. It compares the frequency of exposure among cases and controls, and provides a measure of risk.

Other Bumiputera:

The term “Other Bumiputera” is used to describe other indigenous ethnic groups such as the natives “Orang Asli” and tribal people in Malaysia.

Prevalence:

Prevalence is the proportion of people with a disease or condition at a given point in time. Prevalence is measured by surveying a defined population with and without the disease of interest at a single point in time.

Stressful life events:

Stressful life events are events which cause significant stress and interfere with daily activities, social network and work. The following definitions of stressful life events are used in this thesis:

- **History of assault:**
  History of assault means that the participant had a history of being physically attacked by someone.

- **History of being seriously ill:**
  History of being seriously ill means that the participant had an illness which was life-threatening; or severe enough to interfere with daily activities, social network and work.

- **History of being seriously injured by accident:**
  History of being seriously injured by accident means that the participant was involved in an accident which caused injuries serious enough to cause disability, or needed hospitalisation.
• **History of childhood abuse:**
  History of childhood abuse means that the participant had been physically or sexually abused as a child (12 years old and below).

• **History of losing a parent before the age of 10 years:**
  History of losing a parent before the age of 10 years means that the participant had lost a father or mother through death or permanent separation before the age of 10 years old.

• **History of losing someone close or dear:**
  History of losing someone close or dear means that the participant had lost a confidante or someone the participant depended on (through death or permanent separation). This includes spouses, children, parents, siblings, relatives and close friends.

• **Legal problems:**
  Having legal problems means that the participant has problems with the law, (e.g. being sued or summoned by the law).

• **Recent job loss:**
  Recent job loss means that the participant has recently been laid off from a job or fired.

• **Serious family problems:**
  Serious family problems mean that the participant has trouble getting along with an individual in the family, or someone in the family was suffering from a serious crisis which involved the participant.

• **Serious financial problems:**
  Serious financial problems mean that the participant was unable to settle debts (legal or illegal), and/or has inadequate financial means to meet daily expenditure.

• **Serious difficulty at work:**
  Serious difficulty at work means that the participant has problems at work which may have caused the participant to leave or be fired.

• **Serious housing problems:**
  Serious housing problems mean that the house or place where the participant was living in needed major repairs, and/or the condition of the house was so bad that it interfered with the participant’s life and activities.
- **Serious marital problems:**
  Serious marital problems mean that the participant has marital problems which were serious enough to cause separation, or divorce.

**Unprescribed drugs:**

Drugs which are not prescribed by a doctor, or medical and health personnel.

**Urban:**

An urban area relates to a city or a town. In Malaysia, an urban area includes metropolitan areas (a population of 75,000 and above), urban large areas (a population of 10,000 to 74,999) and urban small areas (a population of 1,000 to 9,999).

**Women:**

A woman (plural: women) is an adult human.