CONTENTS

Editorial

Interactions Between Psychiatric Disorder And Physical Illness.
1-2
Nor Zuraida Z

Original Paper

Bipolar Disorder and Other Associated Factors in Postnatal Depression
3-13
NgCG
Aida SA
Aizura SA
Salina M
Nor Zuraida Z
Koh OH

Psychosocial Factors Influencing Truancy in High Risk Secondary Schools in Kuala Lumpur
14-21
Nik Ruzyanei NJ
Wan Salwina WI
Tuti Iryani MD
Rozhan MR
Shamsul AS
Zasmani S

Women Mental Health in the North of Fars, Iran
22-32
Siamak Khodarahimi
Malihe Khajahe
Reza Sattar
Ali Rsti

Systematic Review on Management of Conversion Disorder
33-39
Siddiqua Aamir

Validation and Psychometric Properties of Bahasa Malaysia Version of the Depression Anxiety And Stress Scales (DASS) Among Diabetic Patients
40-45
Ramli M
Salmiah M.A
Nurul Ain M

The Reliability Of Malay Version Of List Of Threatening Experiences Questionnaire: A Study On A Group Of Medical Students In Malaysia
46-52
Ng CG
Amer Siddiq AN
Aida SA
Koh OH
Nor Zuraida Z

A Case-Control Study To Assess The Comorbidity Of Depression And Migraine
53-59
Rajdeep K
Harish A

Review Paper

Thyroid Disorders And Psychiatric Morbidities
60-68
Sapini Y
Rokiah P
Nor Zuraida Z

Case Report

Conversion Symptoms In Schizophrenia: A Case Report
69-72
Ting JH
EDITORIAL

INTERACTIONS BETWEEN PSYCHIATRIC DISORDER AND PHYSICAL ILLNESS

The vital importance of the mental health of a nation for the overall well being of the population and socioeconomic development is increasingly recognized. In Malaysia, psychiatric disorders were responsible for 8.6% of the total Disability Adjusted Life Years and were ranked fourth as the leading cause of burden of disease by disease categories1. More and more evidence shows that physical illnesses are strongly associated with psychiatric disorders. Those with physical illnesses have much higher risk of developing psychiatric disorders compared to that without2-3. The mechanisms of co-morbidity of psychiatric and physical illness are complex. It is a two-way interaction and there are five different possible ways to describe this4-5.

Co-incidence or By-chance

In clinical practice, the psychiatric illness may be coincidental and unrelated to physical problems, as both physical and psychiatric conditions are common in the general population. Such disorders do, however, complicate the management of the physical illness. For example, depression can predate the onset of the medical illness in up to 25% of patients with co-morbid depression, and it is associated with an increase in somatic complaints5.

Common cause for both

Here, either patient factors or non-disease factors may have given rise to both; for example, stressful life events in a vulnerable person may precipitate both a stroke and a depressive illness6.

Psychological factor or psychiatric disorder cause physical illness

Stress is a known leading aetiology for certain physical illnesses such as hypertension, coronary heart diseases, peptic ulcer disease, acute exacerbation of bronchial asthma etc. Psychiatric disorder can certainly lead to physical complications, for instance, acute renal failure following paracetamol overdose in a patient with depression and the physical complications of chronic substance misuse.

Psychiatric illness contributes to other alterations in health related behaviors, including poor compliance with medications, diet, exercise and utilization of health care services5. DSM IV includes a category of psychological factors affecting medical condition, which is intended to cover patients who have an Axis 3 general medical condition and in whom psychological factors adversely affect the course of treatment. The category is broadly defined and the psychological factors include not only mental disorder but also psychological symptoms, personality traits and maladaptive health behaviors6.

Physical disease may cause psychological symptoms or a psychiatric disorder

The physical disease may cause the predisposed individual to develop a psychiatric disorder. It can be in a direct or indirect manner. Directly, this may be owing to a presumed direct biological mechanism, especially if the disease involves the endocrine or central nervous systems. For
example, hypothyroid patients have depressed mood while hyperthyroid patients have anxiety symptoms as part of their thyroid symptoms. Indirectly, patient with newly diagnosed physical disorder might develop an adjustment disorder. Overall, two-thirds of depressive illness in general medical wards is a result of the physical illness or its treatment\textsuperscript{7}.

*Physical symptoms as the presenting complaints of a psychiatric disorder*

These are common feature of patients with anxiety disorder, depressive illness and somatoform disorder. Symptoms like headache, unspecific pain and tiredness are the most common presentation at the primary care level\textsuperscript{8}. The importance of understanding the mechanisms of the interaction between psychiatric disorder and physical illness should be emphasized not only among the mental health professionals but also among the physicians, surgeons and general practitioners. They should be able to recognize and detect psychiatric problems so that patients would benefit a better holistic treatment.

**References**

1. Malaysian Burden of Disease and Injury Study 2004


*Professor Dr Nor Zuraida Zainal*  
*Editor-in-Chief MJP*
ORIGINAL PAPER

BIPOLAR DISORDER AND OTHER ASSOCIATED FACTORS IN POSTNATAL DEPRESSION

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Abstract

Postnatal depression is common and affects 10-15% of postpartum women. While there are many studies on the depressive episode in the postnatal period, its association with the bipolar spectrum disorder is often go unrecognized and undiagnosed. Objective: To study the rate of bipolar spectrum disorder in mothers presented with postpartum depression and its associated factors. Method: This is a cross sectional study on the women who visited the postnatal clinic in University Malaya Medical Centre. Subjects who consented were asked to complete a short questionnaire looking at the socio-demographic details and asked to answer the Multidimensional Scale of Perceived Social Support (MSPSS), Mood Disorder questionnaire (MDQ) and Edinburgh Postnatal Depression Scale (EPDS) whish assess the perceived social support and mood disorder. Result: A total of 93 women were recruited into the study. Independent t-test and stepwise regression analysis identified that unemployment and baby with health problem were the only associated factors for postnatal depression. 28.6% of the mother with possible postnatal depression (EPDS ≥ 12) might have bipolar spectrum disorder (MDQ ≥ 7). Conclusion: Postnatal depression as part of bipolar spectrum disorder needed additional attention. Postnatal check with screening tools may help to identify mood disturbance in postpartum women.

Keywords: Postpartum depression, bipolar spectrum, screening instrument.

Introduction

Childbirth has been recognized to be a common precipitant of mental illness for mothers. It affects almost 10% of all mothers. A meta-analysis of 59 studies reported a prevalence of 13% with most cases starting in the first 3 months postpartum. The similar result was reported in the earlier studies that psychiatric disorder is common in the months following childbirth. Depression is one of the common mental illnesses identified in the postnatal period. The occurrence of depressive illness following childbirth can be detrimental to the mother, her marital relationship and children. It can have adverse long term effects if untreated.

The lifetime prevalence of bipolar spectrum disorder has been found to be between 2.6% and 6.5%. While there are many studies on
the depressive episode in the postnatal period, its association with the bipolar spectrum disorder is often go unrecognized and undiagnosed. 9,10 Recent study found that misdiagnosis of bipolar disorder as unipolar depression is a well-documented phenomenon in the psychiatric literature. The study revealed that out of 56 women referred with the diagnosis of postpartum depression, more than half actually had bipolar disorder. 11 Another study looking into the recurrent nature of postpartum episode in bipolar disorder found that the polarity of postpartum episode was exclusively depressive. 12 In fact, it is found that women with manic depression are more likely to relapse in the postpartum period. 13,14 The risk of relapse during the postnatal period range between 20% and 50%. 14-17

One way of increasing identification of bipolar disorder in mother with postnatal depression is the use of screening instrument. A brief and easy-to-use screening instrument for bipolar spectrum disorder is the Mood Disorder Questionnaire (MDQ). 18 In regard to the postnatal depression, Edinburgh Postnatal Depression Scale (EPDS) 19 is commonly used in the clinical and research settings. The aim of the study is to identify the rate of bipolar spectrum disorder in mothers presented with postnatal depression by using MDQ and EPDS. The authors also examine the associated socio-clinical features for the mood episodes.

Method

Sampling

The study was conducted at the postnatal clinic of University Malaya Medical Centre (UMMC). UMMC is a teaching hospital situated in Kuala Lumpur. Its patient catchments area includes those living in Kuala Lumpur and also Petaling Jaya, Selangor. Most of the patients are urbanized and affluent.

The obstetrical unit of the Department of Obstetrics and Gynecology is situated in the maternity block of UMMC. The postnatal clinic is located at the ground floor of the building. All the mothers delivered uneventfully in UMMC are given an appointment to come back for checkup six weeks after delivery on Wednesday or Friday afternoon from 2pm till 4.30pm. Mothers with various complications are given earlier appointment to „revisit clinic” on Monday, Tuesday or Thursday afternoon. The average patient load in a month is about 250 visits. The postnatal clinic is conducted combined with Paediatric Unit in assessing the newborn babies.

Study Design

This is a cross sectional study involving all mothers who attended the postnatal clinic in UMMC from 1st March to 31st March 2009. Ethical approval was obtained from the Medical Ethical Committee of UMMC before study commencement. All patients who attended the postnatal clinic of UMMC during the study period were approached. Consent was obtained. Those who consented were recruited and asked to complete a short questionnaire designed by the study team looking at the socio-demographic details and asked to answer the MDQ and EPDS. The social support is assessed with Multidimensional Scale of Perceived Social Support (MSPSS). 20,21 Patients who were unable to answer the questionnaires due to lack of understanding or illiteracy were assisted by the researchers to complete them.

Instrument

The MDQ screens for a lifetime history of a manic or hypomanic syndrome by including 13 yes/no items derived from both the DSM
IV criteria and clinical experience. Finally, the level of functional impairment due to these symptoms is queried on 4 point scale. A MDQ screening score of 7 or more was chosen as the optimal cutoff by the author in the original report, as it provided good sensitivity (0.73, 95% CI = 0.65-0.81) and very good specificity (0.90, 95% CI = 0.84-0.96). In addition, all the symptoms must have occurred at the same time and the symptoms have moderate to severely affected the person’s function.

The EPDS is a 10 items self rated scale, which was derived from the earlier work of Snaith. It was reported to have satisfactory validity, split half reliability and was also sensitive to changes. The scale was fully acceptable to the child bearing women and usually completed within 5 minutes. Based on the data in the author’s original paper, it was suggested that women scored above a threshold of 12/13 were more likely to be suffering from a depressive illness of varying severity. It was recommended that score below cut off should not be taken to indicate the absence of depression.\textsuperscript{19}

The MSPSS developed by Zimet GD in 1988 (Zimet et al, 1988). It is an instrument specifically addresses the subjective assessment of social support adequacy. It is a 12 item instrument designed to assess perceptions of social support from three specific sources: family, friends and significant other. The MSPSS assess the extent to which respondents perceive social support from each of those sources and is divided into three subscales: family (item 3,4,8,11); friends (item 6,7,9,12) and significant other (item 1,2,5,10). It uses a 7-point Likert type response format (1=very strongly disagree, 7=very strongly agree) (Fisher J, Corcoran K, 1994). The MSPSS has excellent internal consistency, with alphas of 0.91 for total scale and 0.90 to 0.95 for the subscales. The author claim good test-retest reliability, factorial, concurrent and construct validity.\textsuperscript{20}

Analysis

Data were analyzed using Statistical Package for Social Sciences Version 13.0. To test the statistical significance, independent t test was used. All the test of significance was two-tailed, with an alpha level of 0.05.

Result

A total of 93 mothers consented and included in the study.
Table 1

Socio-demographic characteristics of the subjects

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Mean</th>
<th>S.D.</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (year)</td>
<td>30.4</td>
<td>5.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malay</td>
<td>56</td>
<td>60.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chinese</td>
<td>16</td>
<td>17.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indian</td>
<td>19</td>
<td>20.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>2</td>
<td>2.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>26</td>
<td>28.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>67</td>
<td>72.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>2</td>
<td>2.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>49</td>
<td>52.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tertiary</td>
<td>42</td>
<td>45.2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1 shows the descriptive characteristics of the 93 samples. The mean age of the subjects was 30 years old (range = 18-46). Most were Malay and achieved at least secondary education. Two third of the subjects were employed.

Table 2

Clinical characteristics of the current pregnancy

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration after delivery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 6 months</td>
<td>32</td>
<td>34.4</td>
</tr>
<tr>
<td>6 months and above</td>
<td>61</td>
<td>65.6</td>
</tr>
<tr>
<td>Planned pregnancy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>46</td>
<td>49.5</td>
</tr>
<tr>
<td>No</td>
<td>47</td>
<td>50.5</td>
</tr>
<tr>
<td>Complication during</td>
<td></td>
<td></td>
</tr>
<tr>
<td>delivery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>41</td>
<td>44.1</td>
</tr>
<tr>
<td>No</td>
<td>52</td>
<td>55.9</td>
</tr>
<tr>
<td>Healthy baby</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>84</td>
<td>90.3</td>
</tr>
<tr>
<td>No</td>
<td>9</td>
<td>9.7</td>
</tr>
<tr>
<td>Placing of baby</td>
<td></td>
<td></td>
</tr>
<tr>
<td>First</td>
<td>45</td>
<td>48.4</td>
</tr>
<tr>
<td>Second</td>
<td>24</td>
<td>25.8</td>
</tr>
<tr>
<td>Third</td>
<td>16</td>
<td>17.2</td>
</tr>
<tr>
<td>Fourth</td>
<td>5</td>
<td>5.4</td>
</tr>
<tr>
<td>Fifth and above</td>
<td>3</td>
<td>3.2</td>
</tr>
<tr>
<td>Breast feeding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fully breast feed</td>
<td>40</td>
<td>43.0</td>
</tr>
<tr>
<td>Never breast feed</td>
<td>5</td>
<td>5.4</td>
</tr>
<tr>
<td>Mixed with bottle feeding</td>
<td>48</td>
<td>51.6</td>
</tr>
<tr>
<td>History of mental illness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>No</td>
<td>92</td>
<td>98.9</td>
</tr>
<tr>
<td>History of medical illness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>86</td>
<td>92.5</td>
</tr>
<tr>
<td>No</td>
<td>7</td>
<td>7.5</td>
</tr>
<tr>
<td>Substance use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>No</td>
<td>92</td>
<td>98.9</td>
</tr>
<tr>
<td>Previous life events</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>20</td>
<td>21.5</td>
</tr>
<tr>
<td>No</td>
<td>73</td>
<td>78.5</td>
</tr>
</tbody>
</table>

Table 2 shows the descriptive characteristics of the pregnancy. One third of the subjects developed complication during the pregnancy and
came for early follow up in the postnatal clinic (less than 6 weeks). Half of the pregnancies were unplanned. Slightly more than half of the subjects had complication during delivery and 9 babies had health problem. Most were first baby for the subjects. Only 40% of the subjects were fully breast feeding.

One fifth of the subjects experienced certain life events prior to the delivery.

The mean MSPSS scores of the subjects was $44.5 \pm 11.6$ (SD). Overall, most of the subjects perceived to have good social support based on the high MSPSS.

Table 3

| EPDS and MDQ score of the subjects |
|---|---|---|---|
| $N$ | Mean | S.D. | $\geq$Cutoff Point |
|   | n | % |
| EPDS (cp = 12) | 93 | 3.9 | 4.0 | 7 | 7.5 |
| MDQ (cp = 7) | 93 | 1.7 | 2.1 | 4 | 4.3 |

Table 3 shows the description of the EPDS and MDQ scores of the subjects. On average, the subjects had low EPDS and MDQ scores. 7 mothers scored above the threshold value of 12 in EPDS and 4 mothers had MDQ scores above the cutoff value of 7.

Table 4

<table>
<thead>
<tr>
<th>MDQ score</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>14.3</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>14.3</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>28.6</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>14.3</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
<td>28.6</td>
</tr>
</tbody>
</table>

Table 4 shows the distribution of the MDQ scores among the 7 subjects with EPDS score above the cutoff value of 12. 2 women scored above the MDQ cutoff value of 7.
<table>
<thead>
<tr>
<th>Category</th>
<th>Mean</th>
<th>t</th>
<th>P</th>
<th>95% CI</th>
</tr>
</thead>
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<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 30</td>
<td>3.89</td>
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<td></td>
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<tr>
<td>30 and above</td>
<td>3.88</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difference</td>
<td>0.01</td>
<td>0.01</td>
<td>1.00</td>
<td>-1.63, 1.65</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malay</td>
<td>3.36</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non Malay</td>
<td>4.68</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difference</td>
<td>-1.32</td>
<td>-1.58</td>
<td>0.12</td>
<td>-2.97, 0.34</td>
</tr>
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<td><strong>Employment</strong></td>
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<td>5.42</td>
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<td></td>
</tr>
<tr>
<td>Yes</td>
<td>3.28</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difference</td>
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<td>-2.37</td>
<td>0.02*</td>
<td>-5.90, -0.51</td>
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<tr>
<td><strong>Education</strong></td>
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<td>Secondary and lower</td>
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<td>Higher than secondary</td>
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<td>Difference</td>
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<td>0.76</td>
<td>-1.91, 1.39</td>
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<tr>
<td><strong>Duration after delivery</strong></td>
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<tr>
<td>Less than 6 weeks</td>
<td>3.53</td>
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<td>6 weeks and more</td>
<td>4.07</td>
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<td></td>
</tr>
<tr>
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<td>-0.62</td>
<td>0.54</td>
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<td><strong>Planned pregnancy</strong></td>
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<td>Yes</td>
<td>3.70</td>
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<td>No</td>
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<td>0.66</td>
<td>-2.01, 1.27</td>
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<td><strong>Complication during pregnancy</strong></td>
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<tr>
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<td>3.70</td>
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<tr>
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<td>3.99</td>
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<td>-0.30</td>
<td>0.76</td>
<td>-2.02, 1.49</td>
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<td><strong>Complication during delivery</strong></td>
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<td>Difference</td>
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<td>-5.90, -0.51</td>
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<td><strong>Placing of baby</strong></td>
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<td></td>
</tr>
<tr>
<td>First child</td>
<td>3.91</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Second and above</td>
<td>3.85</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Discussion**

UMMMC is one of the leading teaching and tertiary referral centre in Malaysia. It is located in Kuala Lumpur, the capital of the nation. Based on the sources from Department of Statistics and assumptions derived from existing number of housing units in Kuala Lumpur, it is estimated that the population in 2000 was 1.42 million. It comprised mostly of Chinese (43%), followed by Malay (38%) and Indian (10%). However in this study majority of the subjects were Malays (60.2%) and less than 20% are Chinese. This could be explained with the low birth rate and preference to deliver in the private hospital among the Chinese in the region.

The original English version of MSPSS was translated into Malay and validated among a group of medical students by the authors. The scale was used to assess the degree of perceived social support in the subjects. Overall, the subjects had good perceived social support in the study. The EPDS was used to examine the depression in the subjects. Based on the original paper by the authors of EPDS, women who score above a threshold of 12 were more likely to be suffering from depressive illness. In this study, there was 7.5% of the mothers score above the cutoff point. It is slightly lower than the previous studies which reported 10-15% of the mothers experience depressive illness after childbirth. It shows that the prevalence of depressive illness varies according to the study setting, design and threshold point of the questionnaire used. MDQ was used to screen for bipolar spectrum disorder in the study. 4.3% of the mothers scored above the cutoff point of 7 as suggested by the authors of the MDQ. It is within the range of prevalence reported in the previous study.

It is commonly known that depression arises when a vulnerable individual confronts adversity. Childbirth is suggested as a "uniquely potent" precipitant of affective disorder in mothers. There were many literatures looking into the occurrence of depressive disorder in postnatal period. In contrast, study on the postpartum depression as part of bipolar spectrum disorder is limited. In this study, the authors aimed to study the rate of bipolar in women presented with postnatal depression. Lane et al (1997) reported a relationship between EPDS and High scores at day 3 and week 6 among mothers. Glover et al (1994) failed to find an association between the scales. In this study, there was 28.6% of the subjects with possible postnatal depression (EPDS ≥ 12) might have bipolar spectrum disorder (MDQ score ≥ 7). This finding is similar to the result of previous study which reported...
the risk of recurrence of bipolar illness after childbirth is thought to be about 25%.\textsuperscript{16,17} Hunt et al (1995)\textsuperscript{14} reported that only 31% of deliveries leading to relapse of mother with a past affective episode. It was explained that childbirth might only hastened the onset of an inevitable affective illness and some bipolar patients are particularly prone to becoming ill after childbirth. In other words, only mother with inherited diathesis may express itself as vulnerable to life events such as childbirth. Johnstone et al (2001)\textsuperscript{37} suggested that most obstetric factors during pregnancy and birth do not significantly increase risk for depression. Instead, the importance of psychosocial risk factors for postnatal depression is emphasized. This is supported by the findings in the current study where complication during delivery or pregnancy do not associated with depression in mothers.

Conclusion

Postnatal depression as part of bipolar spectrum disorder needed additional attention and further studies. Postnatal check with screening instrument may help to recognize mood disturbance in mothers. Early identification and prompt treatment of postnatal mental illness will reduce the adverse effect on the mother, child and family.

Acknowledgement

We would like to take this opportunity to thank all the staffs in the postnatal clinic, UMMC for helping in the data collection for the study.

Reference


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ORIGINAL PAPER

PSYCHOSOCIAL FACTORS INFLUENCING TRUANCY IN HIGH RISK SECONDARY SCHOOLS IN KUALA LUMPUR

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Abstract

This study aimed to determine the psychosocial factors associated with school truancy in secondary school students attending three high risk schools in Kuala Lumpur. It is a cross-sectional study involving 373 Form Four students. Socio demographic, family, living and school characteristics of the respondents were obtained through self-administered questionnaires. There were significantly greater percentage of divorced parents (p=0.025, OR=2.52, 1.01<OR<6.20) and fewer number of bedrooms in the living places of truant (mean=2, SD=0.696) group than among non-truants (mean=3, SD=0.818, p=0.01). Also, greater proportion of those who disliked school (OR=2.52, 1.01<OR<6.20), aimed for lower education goals (OR=2.03, 1.18<OR<3.49) and uncertain of the reason for schooling (OR=3.14, 1.47<OR<6.67) were noted among truants compared with non-truants. The findings support that truancy is a behavior that is affected by multiple intrinsic and external factors. Identification of these factors is useful in strategizing measures at school and community level to curb truancy.

Key words: School truancy, high risk adolescents, psychosocial factors

Introduction

School truancy is a grave concern particularly to parents, educators, mental health professionals and society at large. Truancy has been strongly linked to greater discipline problems in school (1,2,3) and later criminal behavior in adulthood (4,5). Effective identification, prevention and management strategies are important to avert its multiple adverse outcomes.

In Malaysia, it is the number one discipline problem accounting about a third (32%) of all discipline problems (6). Truancy has been frequently highlighted as a disturbing social ill in the local media. Indeed, a survey on the involvement of teenagers in various social problems reported that truancy was among the second most prevalent (34.4%) problems in Malaysia, next to loafing (7).

There were many surveys done on adolescents’ delinquency but very few focused on truant behavior although it is often the first indication of behavioural problems in children. Truancy is a behavior
derived from interactions between students’ vulnerability, family factors, peers’ influence, school factors and the community’s social environment (8). Demographic factors like age, gender and ethnicity may also contribute in response to psychosocial changes as a child grows.

Studies in Malaysia and elsewhere consistently showed that school attendance problems increases with higher grades and older students (3,5,9). While boys are twice more likely to be truant than girls (3), many researches did not find substantial differences in truant behavior across genders (5,9,10). In Japan however, there appeared to be a changing trend for more girls to engage in problem behaviours than in the past (11). Some studies found significant ethnic influence in truant behaviour (9) while others found an interaction between gender and ethnicity (12).

Family factors associated with delinquent behaviour include family disharmony (13,14,15), parenting style and supervision as well as family size (5,15). Truants were also disproportionately drawn from poorer homes with adverse social factors like overcrowding, poor housing and multiple family problems (1).

Urbanization may encouraged truancy as Lippman et al. (16) reported that urban schoolchildren were more often absent from school than students in suburban or rural environments. Similarly, a survey in Malaysia found 18.6% of adolescents were ever absent from school in Terengganu (suburban) compared to 26% in Kuala Lumpur (urban), (3). A number of studies showed good evidence that there were significant differences between schools in attendance difficulties irrespective of the characteristics of pupils like poor academic ability or previously disturbed behaviour (4).

Overall, truant behavior is subjected to socio-cultural difference together with factors like educational and legal systems. This study aimed to determine the factors associated with truant behaviour among students attending high risk schools in Kuala Lumpur. We focused on moderate truants who were still attending school albeit irregularly. Hopefully, this would provide opportunity for practical school-based intervention programmes.

**Materials and Methods**

This was a cross sectional study conducted upon a total of 469 students from ‘high risk’ secondary schools in the Pudu area of Kuala Lumpur. Three ‘high risk’ schools were identified in Pudu and defined by Kuala Lumpur Federal Territory Education Department [20] as ‘schools with high rates of disciplinary problems and/or located in high-risk areas. Although the study targeted 16 to 18 year-olds adolescents, all subjects were in Form Four (predominantly 16 year-olds) in order to conform to the restrictions imposed by the Ministry of Education regarding involvement of exam year students (which inadvertently excluded the Form Three and Five students). Students with mental retardation and from the special education classes were excluded. Assent and consent were obtained from the participating subjects and their parents respectively. At confidence level of 95%, and prevalence of truancy of 30 percents from the result of previous survey (3), the sample size was calculated to be 323 subjects based on the formula used to estimate a population proportion with specified absolute precision by Lwanga and Lemeshow (17).
The guidelines by Kuala Lumpur Federal Territory Education Department [18] defined ‘truants’ as those who were absent from school on official schooling day without verbal or written reasons from parent(s) or guardian or a medical doctor; a total of 20 days or more indicated moderate to severe truancy. The days of truancy per student from the start of school year was obtained from the school records.

The study was conducted in the classrooms where students completed self-administered questionnaires on demographic, family and school variables. These included gender, ethnicity, parents’ education level, parents’ living and marital status, family size, number of bedrooms available at home and whether the subjects’ find their living condition comfortable or not. School variables included questions on their goals in education, whether they liked school or not, whether they thought they understood the reason they went to school and whether they thought going to school was a waste of time. The questionnaires were made available in both English and Bahasa Malaysia languages.

The study was approved by the Research and Ethics Committee, Universiti Kebangsaan Malaysia and granted permission by the Ministry of Education, Department of Education of the Federal Territory of Kuala Lumpur and the respective school principals. Data analysis was done using the Statistical Package for Social Studies (SPSS) software version 12.0 [19]. For the purpose of statistical analysis, the groupings for some variables were collapsed into 2 groups (2 by 2 tables). Only differences significant at $p<0.05$ were reported.

Results

From 469 subjects who were eligible to participate in the study, a total of 373 subjects completed the questionnaires (79.5% response rate). Those who did not were due to absence on the days of survey (n=54); lack of parental written consent (n=7), both absence and lack of the parental consent (n=26) and incomplete questionnaires (n=9). Of the 373 subjects, 79 were identified as truants. Further analysis showed that there were no significant differences between study respondents and non-participants in terms of gender and ethnicity.

Overall, the subjects came from a rather homogenous socio-economic background whereby majority of the parents only had up to secondary school education (85%-fathers; 92%-mothers). Majority of the parents were married (n=255). There were significantly higher proportion of divorced parents in the truant group (n=10, 13%) compared to non-truants (n=16, 5%); those from divorced parents are 2.5 times more likely to be truant than those from intact marital family background (OR=2.52, 95% CI =1.01 < OR 6.20). There were also significant disproportion of those who disliked school (OR=2.52, 95% CI=1.01<OR<6.20),aimed for lower education goals (OR=2.03, 95% CI =1.18<OR<3.49) and uncertain of the reason for schooling (OR= 3.14, 95% CI=1.47<OR<6.67) in the truant group compared to non-truants. The prevalence odd ratios showed that those who disliked school, had lower goals in education and uncertain of the reason for schooling were 2.5, 2 and 3 times respectively more likely to be truant.
Table 1 Demographic, family and schooling factors associated with truants compared to non-truants.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Characteristics</th>
<th>Non-Truant (n=294)N(%)</th>
<th>Truant (n=79)N(%)</th>
<th>Tests</th>
<th>$^p$ value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Male</td>
<td>166 (56.5)</td>
<td>45 (57.0)</td>
<td>0.006$^a$</td>
<td>0.937</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>128 (43.5)</td>
<td>34 (43.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td>Malay</td>
<td>181 (61.6)</td>
<td>53 (67.1)</td>
<td>1.920$^b$</td>
<td>0.577</td>
</tr>
<tr>
<td></td>
<td>Chinese</td>
<td>79 (26.9)</td>
<td>21 (26.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Indian</td>
<td>28 (9.5)</td>
<td>5 (6.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>6 (2.0)</td>
<td>0 (0.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tests</td>
<td>$^p$ value</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family factors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parents’ living status</td>
<td>Father deceased</td>
<td>21 (7.1)$^#$</td>
<td>5 (6.3)$^#$</td>
<td>0.064$^a$</td>
<td>0.801</td>
</tr>
<tr>
<td></td>
<td>Mother deceased</td>
<td>5 (1.7)$^#$</td>
<td>2 (2.5)$^#$</td>
<td>0.000$^b$</td>
<td>0.987</td>
</tr>
<tr>
<td>Parents’ marital status</td>
<td>Married</td>
<td>255 (86.7)$^#$</td>
<td>63 (79.7)$^#$</td>
<td>2.419$^+$</td>
<td>0.120</td>
</tr>
<tr>
<td></td>
<td>Separated</td>
<td>11 (3.7)$^#$</td>
<td>3 (3.8)$^#$</td>
<td>0.000$^c$</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td>Divorced</td>
<td>16 (5.4)$^#$</td>
<td>10 (12.7)$^#$</td>
<td>5.000$^+$</td>
<td>0.025$^+$</td>
</tr>
<tr>
<td></td>
<td>Father Remarried</td>
<td>7(2.4)$^#$</td>
<td>(3 (3.8)$^#$</td>
<td>0.090$^c$</td>
<td>0.764</td>
</tr>
<tr>
<td></td>
<td>Mother Remarried</td>
<td>9 (3.1)$^#$</td>
<td>3 (3.8)$^#$</td>
<td>0.000$^c$</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td>Father – polygamy</td>
<td>8 (2.7)$^#$</td>
<td>5 (6.3)$^#$</td>
<td>1.457$^c$</td>
<td>0.227</td>
</tr>
<tr>
<td>Comfortable living place</td>
<td>Yes</td>
<td>231 (78.6)</td>
<td>57 (72.2)</td>
<td>2.992$^b$</td>
<td>0.199</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>58 (19.7)</td>
<td>22 (27.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schooling factors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feeling about school</td>
<td>Like school very much</td>
<td>61 (20.7)</td>
<td>10 (12.7)</td>
<td>5.000$^a$</td>
<td>0.025$^*$</td>
</tr>
<tr>
<td></td>
<td>Like school</td>
<td>104 (35.4)</td>
<td>27 (34.2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Like school a lit. bit</td>
<td>113 (38.4)</td>
<td>32 (40.5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dislike school</td>
<td>15 (5.1)</td>
<td>10 (12.7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dislike school much</td>
<td>1 (0.3)</td>
<td>0 (0.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Goals in education</td>
<td>&lt;Secondary school</td>
<td>7 (2.4)</td>
<td>2 (2.5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Secondary school certificate</td>
<td>35 (11.9)</td>
<td>14 (17.7)</td>
<td>7.566$^a$</td>
<td>0.006$^*$</td>
</tr>
<tr>
<td></td>
<td>Diploma</td>
<td>40 (13.6)</td>
<td>12(15.2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Degree</td>
<td>59 (20.1)</td>
<td>15 (19.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Master</td>
<td>37 (12.6)</td>
<td>3 (3.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PhD</td>
<td>70 (23.8)</td>
<td>13 (16.5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understands the purpose of schooling</td>
<td>Yes, I understand</td>
<td>272 (92.5)</td>
<td>63 (79.7)</td>
<td>11.098$^a$</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>No, I don’t</td>
<td>8 (2.7)</td>
<td>2 (2.5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Uncertain</td>
<td>14 (4.8)</td>
<td>14 (17.7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thinks school is a waste of time</td>
<td>Yes</td>
<td>17 (5.8)</td>
<td>5 (6.3)</td>
<td>3.497$^a$</td>
<td>0.061</td>
</tr>
<tr>
<td></td>
<td>Sometimes</td>
<td>112 (38.1)</td>
<td>39 (49.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>165 (56.1)</td>
<td>35 (44.3)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fewer number of bedrooms were found in the living places of truant group (mean=2; p=0.01) than non-truant group although there was no significant difference in the size of the families (Table 2).

17
Table 2: The association between family size and number of bedroom with truants versus non-truants

<table>
<thead>
<tr>
<th>Variables</th>
<th>Non-truant (n=294) Mean (SD)</th>
<th>Truant (n=79) Mean (SD)</th>
<th>( t ) statistic</th>
<th>( p ) value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family size</td>
<td>6 (1.757)</td>
<td>6 (2.444)</td>
<td>-0.550</td>
<td>0.584</td>
</tr>
<tr>
<td>Number of bedroom</td>
<td>3 (0.818)</td>
<td>2 (0.696)</td>
<td>-2.505</td>
<td>0.013*</td>
</tr>
</tbody>
</table>

\( ^*p<0.05 \)

Discussion

The demographic characteristic of truants did not differ much from the non-truant group. In the account of homogeneity of the socio-economic background of the study population, this finding was not surprising. The schools served low to middle working class population whereby the types of housing are predominantly flats built by Kuala Lumpur municipal council, low-cost apartments and to a lesser extent link single/double-storey houses. It has good overall infrastructure although overcrowding is a problem. The schools’ location is deemed 'high risk' as it is part of urban Kuala Lumpur where crime rates are high and the presence of many major shopping complexes in the vicinity act as major distraction to students.

It is interesting though to find that gender difference did not influence truant behaviour. This study finding is in contrast to a survey by National Population and Family Development Board Malaysia (NPFDSP) in 1999 (3) which found that the rate of boys truanting in Malaysia is double that of girls. Rather, this repeats the findings of few studies done in the west (9, 10). Perhaps the result of this study is also a reflection of the current situation as NPFDSP study was done nearly a decade ago. Similar change in the trend in that more girls tend to engage in problem behaviours than in the past was also remarked earlier in Japan (11).

Home factors have also great influence in shaping children’s behaviour. These factors encompass family size, housing structure such as the number of bedrooms, the size of the house and home atmosphere characterized by the quality of parenting (parents’ supervision, affection, attention), level of communication and interpersonal relationship within family including extended family members (15).

There is little doubt that the relationship of family size to delinquent behaviour can be attributed to inter-related home variables such as living in poor and overcrowded homes. Majority of the study respondents live in the surrounding low cost flats that were built narrowly. Living space is precious in urban Kuala Lumpur and this is reflected in the size of the flats and number of bedrooms between 2 and 3 bedrooms per house with an average of 6 people per family built narrowly. Living space is precious in urban Kuala Lumpur and this is reflected in the size of the flats and number of bedrooms between 2 and 3 bedrooms per
house with an average of 6 people per family.

This study showed no significant difference in terms of family size among the study subjects. Conversely, a significantly fewer number of bedrooms in the homes of truants were noted in comparison with those in non-truant group. Despite this, majority of the study respondents claimed that their living condition is comfortable. Perhaps this reflects insufficient characterization of the matter in this study. It can be inferred that more need to be explored, for example, in terms of leisure activities/outlet, home privacy and so on.

Another important factor influencing adolescents' delinquent behaviour is the quality of the relationship between an adolescent and his/her parents (20). A strained, hostile and rejecting relationship between the parent and the teenager increases the likelihood of delinquency. A common reason for teenagers to experience such relationship is parental divorce.

In this study, those from divorced parents are 2.5 times more likely to be truant than those from intact marital family background (OR=2.52, 95% CI =1.01 < OR < 6.20). This finding is in accord with other findings of similar studies worldwide (15,21).

One hypothesis behind this association is that the parent who is left with the care of the child (usually the mother) suffers the stress of divorce that may aggravate further conflicts between her/him and the child (15). The stress is attributed to the resultant reduced social support, financial problem and absence of respite from domestic chores which will adversely affect parenting and supervision of the child (15). It has been shown that following divorce, parenting skills of both the custodial and non-custodial parents decline leading to disrupted home routine, home atmosphere and oversight of children’s activities (20). These factors put adolescents at risk of delinquency.

This study also found that significantly greater proportion of those who disliked school, aimed for lower education goals and uncertain of the reason for schooling among truants compared to non-truants. It is well established that dropouts were more likely to have lower levels of aspirations and higher delinquency rates (20). Those who achieve in school have good study habits, interested in school, are grade-conscious, have relatively higher degree of self-confidence and self-acceptance, highly motivated for academic achievement and set realistic goals for themselves. Underachievers tend to have difficulty in these areas. They tend to be impulsive, pleasure-seeking, incapable of delaying rewards, dislike school, derive relatively little satisfaction from it and generally more pessimistic about the future. Similar factors can be speculated to be in the play as truancy is strongly linked to school failure (4,5).

**Study limitations**

This is a cross-sectional study where the findings are strictly limited to establish associations between truancy and variables studied. Longitudinal studies that account the onset, course and severity of truancy should be endeavored in the future.

Another limitation lies in the selection of the sample which is based on convenient sampling which limits the generalizability of the study findings. For instance, the homogeneity of the social background of the study population precludes the applicability of study findings to a more socio-economically diverse population.
This study is a purely school based survey. The population recruited inadvertently excluded those who were persistently absent that they dropped out of school. A more comprehensive survey of truancy would preferably include those who had persistently absent from school at wider scope of community setting (e.g. places where teenagers who truant hang out like shopping complexes, video arcade or cyber cafe).

Acknowledgement

Special thanks to the Ministry of Education of Malaysia, Kuala Lumpur Federal Territory Education Department, the respective school principals, teachers and most importantly all the adolescents who participated in this study. We also extend our deepest appreciation to the staff of the Child and Adolescent Psychiatric Unit of UKMMC.

References


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ORIGINAL PAPER

WOMEN MENTAL HEALTH IN THE NORTH OF FARS, IRAN

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\(^1\) Islamic Azad University-Eghlid Branch
\(^2\) Islamic Azad University-Arsanajan Branch

Abstract

The purpose of present study was to examine the effects of demographical factors in women mental health in an Iranian sample. The effects of demographical factors on women’s psychopathology within a survey design investigated among 200 women who were selected by random sampling method and their mental health measured by SCL-90-R checklist. All of psychopathological indices were significantly higher among singles, 36–40 years aged group and females with low socio economic status. Women’s levels of education and city of residence were effective on their mental health. Overall findings support of marital status, age, socio economic status, level of education and city of residence influences on women’s mental health. The common trend for demographical factors effects in women mental health was consistent with ones in feminine psychopathology throughout the universe but there is another cultural-bounded explanation too.

Key words: Women, mental health, psychopathology, demographical factors.

Introduction.

Women with a portion to over of half population in the world, especially in developing countries such as Iran, should take into consideration in any community based mental health programs. Women’s significant roles in global development of society, child rearing, family endorsement and workplace, their mental health influence by many sociocultural factors\(^1,2\). In contrast to women’s participation in the paid labor force during the recent decades that increased in country too, the major lines of women’s psychology investigation has mostly focused to the effects of child care and maternal employment in children rather than their psychic wellbeing\(^2\). While universal growing literature has examined the effect of women's multiple roles on their own physical and mental health, and indicated their multiple roles have negative health outcomes for them\(^3\).
Many findings highlighted a different voice that named gender-orientation in mental health care which originated in women multiple roles\(^2\). Hence, as Smith noted mental health policy has increasingly emphasized the centrality of the service user perspective with respect to services users various roles in society\(^4\). He noted key issues in mental health delivery that influence an individual’s experience of the world include gender, race, sexuality, class, disability and age which must be incorporated into research, service planning, organization, delivery and evaluation in mental health system. Gender describes women and men characteristics that are socially determined and is crucial to man sense of which we are, portrait the roles we adopt, the way in which human perceive others and in which they perceive each others. Smith argued the individual uniqueness recognition and individual differences understanding between women are just as important as the differences between women and men, especially in disadvantaged, undeveloped and indigenous environments\(^4\).

With respect to gender-orientation in mental health care, it estimated that depression will become the second most important cause of disease burden in the world by the next decade, and women in both of developed and developing countries are almost twice as likely as men to experience depression\(^5\). WHO applied two frameworks for women mental health that involve public policy and gender approaches. The public policy including economic policy, socio-cultural and environmental factors, community and social support, stressors and life events, personal behavior and skills, and availability and access to health services which all has an explanatory role in women’s mental health status. WHO proposed a gender approach for explaining of sex-ratio differences among women and men against mental disorders, but this does not exclude biological or sex differences, and it considers the critical roles that social and cultural factors between men and women play in promotion and administration of mental health programs. This perspective in women’s welfare is well documented and to have a positive impact for the general health of all sectors in any supposed society\(^5\). Now, women mental health policy movement needs to incorporate their mental and physical health across the life cycle that is beyond of the reproductive and the maternal roles. Theoretically, it seems women's well-being triangle determined by biological, reproduction and socio-cultural factors \(^2,6\). Hence, based on the gender orientation, health policy and multiple roles approaches in mental health paradigm, investigations suggested that both of physical and mental health dimensions in women across of their life cycle and within socio cultural contexts can brings useful implications for any efficient intervention among them at individual and collective levels\(^2,6,7,8,9\). Evidence proved the effects of demographical factors on women’s mental health, and addressed them in various national mental health statistics, policies, diagnostic manuals, and abnormal psychology sources \(^3,6,7,8,9\).
Empirical studies of mental disorders across diverse societies and social contexts revealed that depression, anxiety and unspecified psychiatric disorder are more prevalent among women. For example, the World Bank reflected these differences. The patterns for depression and general psychological disturbance consistently documented in many studies, and within societies across the globe which mostly explained by socio cultural factors. Women mental health vulnerability more were explained by social class, poverty, severe life events, social distress, violence, parenting and child care, intimate and interpersonal, social network and ethnicity factors. Poverty, domestic isolation, overwork, sexual and reproductive violence, civil and state violence, powerlessness, harassment, certain state economic policies, and patriarchal oppression all were linked with higher prevalence of psychiatric morbidity in women which pointed to the social origins of psychological disorder in women.

Despite of the huge evidence in women’s mental health pathogenesis and its explanations, especially in western societies, there is a lack of investigation for Iranian females. Present study is a community-based investigation for the effects of demographical factors exploration and policy making for efficient interventions in women’s mental health in country. Specifically, present essay is more focused to the fact that we know very little about the issue in Iran, especially in the north of Fars province, and demographic factors contributions in women mental health. Here, based on public policy and gender approaches we will to investigate the roles of marital status, aged group, socio-economic status (SES), level of education, and city of residence on women’s mental health in Bavanat and Khorambid cities, two marginal cities of Abadeh official provincial city in the north of Fars province. Bavanat is a mostly traditional culturally, agricultural and geographically an isolated city. While Khorambid is a relatively industrialized and agricultural zone which located beside of Esfahan-Shiraz highway and its population are more immigrants from country districts. Subsequently, it suggested that women roles and aspirations in both cities are different. The main object is to examine the demographical variables effects in women’s mental health between two cities and to make recommendations for future prevention programs and research. Finally, in correspondence with gender orientation, public policy and multiple roles perspectives in women mental health, we hypothesized that demographical factors have significant contributions in women mental health in Bavanat and Khorambid cities as an unrepresented area.

Method

Subjects

National census indicates that majority of women population in the north of farce province belonged to 20-40 years aged group. Study population were included all of them in central district of Bavanat & Khorambid cities. Because of their involvement to education, marriage, child rearing, market labor and direct encounter
with socio-cultural alternations and life events, it was estimated that this cohort more vulnerable against mental health problems than youngsters and over-middle aged ones. Based on Line table for sample size estimation from population, study sample were 200 females, 100 participants from each city respectively. However, 140 cases were single and 60 cases were married. Also, they were belonged to four aged groups that include 20-25 (N=60), 26-35 (N=80) and 36-40 (N=60) years-old. In socio economic status variable, subjects were belonged to low (N=41), moderate (N=89) and high (N=70) categories. Their levels of education were vary from elementary (N=33), guidance (N=47), high school diploma (N=60) and bachelor degrees (N=60). All participants were selected by random sampling method and then answered inventories after informed contest completion.

**Materials**

Research instruments were two inventories. One developed by authors for demographic variables measurement that named personal information sheet and the second instrument was SCL-90-R for assessing of mental health and psychopathology. Although there isn’t any earlier evidence for SCL-90-R application in psychopathology assessment but we used it for several reasons. It was used because the lack of reliable and valid scale for psychopathology measurement in country, and it is time-cost benefit for both of respondents and investigators. It has potential capability to apply as a semi-structured interview among individuals in subcultures, and was correspondent with our earlier impressions and observations about of common mental health problems among women clinically. For instance, many cases refuge psychological services because of cultural contexts, especially labeling and stigmatization but you can identify their clinical symptoms by SCL-90-R easily. SCL-90-R invented by Derogatis in 1977. SCL-90-R consisted of 90 items with somatization (12 items), obsessive-compulsive (9 items), anxiety (10 items), interpersonal sensitivity (9 items), depression (13 items), aggression (6 items), phobia (7 items), paranoid (6 items), psychosis (10 items), and atypical (7 items) factors. In addition, it has a total scale score index. SCL-90-R reliability was confirmed by Derogatis in 1976. SCL-90-R reliability was fluctuated from r=.90 for depression factor as the highest and r=.77 as the least for psychosis factors. SCL-90-R validity with MMPI was the highest for depression (r=.73) and the lowest (r=.36) for phobia factors. SCL-90-R was standardized for Iranian population and its validity and reliability affirmed too. In a recent study, Marashi reported SCL-90-R reliability by internal consistency alpha as follow: somatization (α=.84), obsessive-compulsive (α=.91), interpersonal sensitivity (α=.82), depression (α=.93), anxiety (α=.86), aggression (α=.90), phobia (α=.83), paranoid (α=.81), psychosis (α=.84) and total scale (α=.98).

**Design and Procedure**

This study was a survey in women mental health. Dependent variable was women’s mental health with 10 scales as indication of
their psychopathology. Independents were women’s marital status, age, level of education, socio-economic status, and city of residence variables. Based on research ethics, all respondents were completed demographic sheet and SCL-90-R individually and in home after informed contest completion.

**Results**

The marital status effect in women’s mental health analyzed by t-test for independents groups among single and married ones. Analysis indicate that marital status was effective in women mental and its subscales, except in depression, and singles females had significant more negative mental health status than married partners (Table 1).

<table>
<thead>
<tr>
<th>Independents variables</th>
<th>Dependents variables</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marital status</td>
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<td>3.61</td>
<td>.01</td>
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<tr>
<td></td>
<td>Obsessive compulsive</td>
<td>2.11</td>
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<tr>
<td></td>
<td>Interpersonal sensitivity</td>
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<td>.005</td>
</tr>
<tr>
<td></td>
<td>Depression</td>
<td>1.46</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>Anxiety</td>
<td>4.47</td>
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</tr>
<tr>
<td></td>
<td>Aggression</td>
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<td>.05</td>
</tr>
<tr>
<td></td>
<td>Phobia</td>
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<td>.005</td>
</tr>
<tr>
<td></td>
<td>Paranoia</td>
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<tr>
<td></td>
<td>Psychosis</td>
<td>3.46</td>
<td>.005</td>
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<tr>
<td></td>
<td>Total scale</td>
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</tr>
<tr>
<td>City of residence</td>
<td>Somatization</td>
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<td>Obsessive compulsive</td>
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<td>Depression</td>
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<td>.02</td>
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<td>Anxiety</td>
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<td>Aggression</td>
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<td></td>
<td>Phobia</td>
<td>5.77</td>
<td>.005</td>
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<tr>
<td></td>
<td>Paranoia</td>
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<td></td>
<td>Psychosis</td>
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<tr>
<td></td>
<td>Total scale</td>
<td>5.01</td>
<td>.005</td>
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</tbody>
</table>

The aged-group influence in women’s mental health examined by One-way ANOVA between three groups that were included 20-25, 26-35 and 36-40 years
categories. Analysis indicate that aged group was effective in women mental health and it subscales significantly so (Table 2), and the posteriori comparisons by Duncan test revealed that 20-25 years aged group had significantly positive mental health than 26-35 and 36-40 years age- groups in all dimensions. Additionally, 36-40 years aged-group had significant more negative mental health than others two groups in all factors (Tables 2).

Table 2 Aged-group, SES and women mental health

<table>
<thead>
<tr>
<th>Independents variables</th>
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<th>p</th>
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</thead>
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<td>Aged-group</td>
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<td>Obsessive compulsive</td>
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<td></td>
<td>Interpersonal sensitivity</td>
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<td>Depression</td>
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<td>Anxiety</td>
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<tr>
<td></td>
<td>Aggression</td>
<td>3.80</td>
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</tr>
<tr>
<td></td>
<td>Phobia</td>
<td>12.70</td>
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</tr>
<tr>
<td></td>
<td>Paranoia</td>
<td>8.50</td>
<td>.01</td>
</tr>
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<td></td>
<td>Psychosis</td>
<td>14.37</td>
<td>.01</td>
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<td></td>
<td>Total scale</td>
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<td>.01</td>
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<tr>
<td>SES</td>
<td>Somatization</td>
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<td>Obsessive compulsive</td>
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<tr>
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<td>Interpersonal sensitivity</td>
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<td></td>
<td>Depression</td>
<td>4.2</td>
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<tr>
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<td>Aggression</td>
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<td></td>
<td>Paranoia</td>
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<td></td>
<td>Psychosis</td>
<td>7.51</td>
<td>.05</td>
</tr>
<tr>
<td></td>
<td>Total scale</td>
<td>18.08</td>
<td>.05</td>
</tr>
</tbody>
</table>

The SES effect in women’s mental health analyzed by One-way ANOVA within three low, moderate and high classes, and show its role in women’s mental health scales, except in depression and paranoia, significantly too. Here, the posteriori comparisons by Duncan test indicated that women with low SES had significant more negative mental health than who with moderate and high SES classes (Table 2).

The levels of education effects in women’s mental health analyzed by One-way
ANOVA which reject generally, except for OCD (F=3.64, P=0.01) and anxiety (F=3.47, P=0.01) subscales. Now, the posteriori comparisons by Duncan test proved that women’s with elementary (M=13.34, SD=2.58), guidance (M=12.98, SD=2.66) and diploma (M=13.18, SD=2.81) levels of education had significant more obsessive-compulsive than those with bachelor’s degree (M=9.75, SD=2.33). However, findings indicated that women with elementary (M=13.30, SD=2.70), guidance (M=13.20, SD=2.64) and diploma (M=13.23, SD=12.66) levels of education had more anxiety than ones with bachelor’s degree (M=8.10, SD=1.98) significantly. The city of residence influence in women’s mental health investigated by t-test for independents groups between them in Bavanat and Khorambid cities, and indicate that women from Bavanat city had significant more psychopathology in all scales than them resident in Khorambid city (Table 1).

Discussion

Present study was indicated that marital status has positive role in somatization, obsessive-compulsive, interpersonal sensitivity, anxiety, phobia, aggression, paranoia, psychosis and total mental health scale among women, and single females had more psychopathology rates than married ones significantly. This is consistent with earlier findings and supports the buffering effect of marriage against mental disorders in women. In an Iranian community married being operates as a buffer system for mental health too. It suggested that married couples have shared responsibilities and resources that may help them to support each other in crisis, and life transitions and events. Due to of emotional ties and low roles complexity it expected that mutual commitment is more powerful among married women which belonged to traditional subcultures such as present respondents. Perhaps when couples confront with a negative life event in subcultures, in addition to their common resources they got many supports from their original family so. Another plausible explanation related to labor task in Iranian culture, since family income is duty of husband in community subculture, and a married woman position is much stabilizes than single female. Hence all of these may explain how marriage can influence women's mental health positively.

Aged-group effect on women’s mental health was demonstrated in present study too, and age increase was linked with women’s vulnerability to mental disorders elevations. Otherwise, age was effective on women’s mental health and all of mental health subscales, except depression, which were more among over 36-40 years aged-group significantly. In line with former studies, it means that moderate life-span increase for Iranian women didn’t guarantee their optimum mental health exclusively. From developmental perspective, women’s age increase can expanding their responsibility in social–familial contexts but their bodily ability will decrease across adulthood and over stages which both of them lead to their psychological vulnerability finally. As noted earlier the familial labor division in studied subculture is very traditional, while current salary of
men isn’t sufficient for covering of everyday cost of families due to high inflation rate obviously and hereby adult women are at more high risk against mental illness. Because men mostly involved in work and will expect women to regulate and mange the economic, emotional, child rearing and other tasks of family that result to their burnout over the time gradually. Furthermore, low access to gross social support for women in house, market labor and global society plus socio-cultural fluctuations, especially for householders’ wives, has major contribution in 36-40 years aged women psychopathology. Here, they should take multiple roles without efficient supportive resources and legislations to them.

Also, women's mental health was influenced by their levels of SES that those with low SES had more mental disorders than ones with moderate and high SES classes significantly. SES was effective on all of mental health subscales in women, except depression, which them with low SES class had more mental disorders clearly, and it consistent to higher psychopathology incidence among low social class individuals within abnormal literature. It is reasonable that women with Low SES class often encounters with many obstacles such as deprivation, poverty, workless, heath problems, low education and social skills etc. It may due to societal inequality of resources distribution in community based programs, but that is important for identification of high-risk women, and prevention and treatment goals in any social policy for women’s empowerment.

The role of literacy and level of education in women mental health was demonstrated only for anxiety and OCD subscales which confirm it’s beneficial in mental health enhancement for university educated females. This is congruent with Hines findings. Implicitly, literacy express the importance of academic education for women’s mental health constellation as a new coping style that how to follow their rights, professional roles, autonomy attainment, and adjustment toward the external environments complexities. Education increase their potentials for social and problem solving skills, self-knowledge and self-demonstration in a male gendered society. Psychoanalytically, more OCD and anxiety among women with low literacy might indicate their suppression defense mechanisms against domestic violence which are common in traditional subcultures and affirmed in clinical or therapeutic observations.

It was proved that city of residence have significant effect in women’s mental health, and women from Khorambid were more disordered than Bavanat partners in all of mental health scales. It was displayed the roles of geographical, ecological and sub cultural factors in women’s mental health in an eastern population. Since Khorambid is an industrialized and multicultural city with a high portion of immigrant population, it could to produce the multiple roles, roles confusion and conflict, labor division challenge, and more social injustice among
the women and hereby decrease their mental well being.

Finally, marital status, age, literacy, socioeconomic status and city of residence, as demographical variables, have significant effects in women mental health in an Iranian sample. This is true as a common trend for demographical factors effects in women mental health in an Iranian community too that well known in feminine psychopathology risk factors throughout of the universe. As literature addressed to gender orientation, health policy and multiple roles approaches triangle in women mental health\textsuperscript{2,4,5} these supported in an Iranian society too. Although there is an alternative cultural-bounded explanation\textsuperscript{2,11,12} but have shared components with above triangle. Here, for explaining of these findings one should be adhering to Iranian culture. As, Jalali argued in the traditional Iranian family, men are the primary wage earners and demand respect and obedience in return. The general Iranian Islamic culture also supports men as the inclusive authority figures and the source of family livelihood, and making them responsible for its well-being\textsuperscript{28}. But traditional notions of manhood are very much attached to this provision of income for the family and assuming the responsibility for decisions affecting the fate of its members via an engendered orientation\textsuperscript{28}. There is more risk for women mental health behind of this cultural tradition and it seems parallel with greater risk of mental disorders in women\textsuperscript{28}. For example, a recent study indicated adults women are at very greater risk for clinical mental disorders\textsuperscript{29}. Thus, any applied pathway for women in country may wish for changing and improvement of public policy mental health programming and gender approach challenging for sex-linked roles. Basically, consistent with WHO guidelines all programs should be attuned to women's voices, needs, wishes, training, resources, social networks and opportunities, hopes and worries the future for themselves and their families\textsuperscript{5}. Further investigation may examine and explore the role of personality, motivational, intellectual, familial, societal, cultural, individual differences, and neuroscience pathways in women mental health in country at regional and national levels. Certainly, scientific based policies can have many positive outcomes for women and supporting them from abuse, violence and oppressive conditions that will bring their healthy.

References


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SYSTEMATIC REVIEW ON MANAGEMENT OF CONVERSION DISORDER

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Abstract

Objective: The aim of review was to find the recent evidence for the management of conversion disorder. Methods: The study was conducted at the Psychiatry Unit of Govt. Lady Reading Hospital, Peshawar, Pakistan. A systematic literature search was done using Medline and Extra Medline. A total of 10 articles fulfilled the inclusion criteria. Results: In the literature reviewed hypnosis and self hypnosis, psychoanalytical intervention, behavioral intervention, paradoxical intervention, treatment by strong suggestion and transcranial magnetic stimulation were the treatments used by the clinicians for the management of conversion disorder. Conclusion: The literature review did not give details concerning the treatment used for conversion disorders adequately. Behavioral interventions were in general found to be more successful treatment course for the management of conversion disorders.

Keywords: Conversion disorder, hypnosis, psychoanalytical, behavioral intervention.

Introduction

Conversion disorder has challenged clinicians throughout the centuries. When neurological disorders are excluded by history, physical examination, laboratory studies including radiographic and imaging studies, therapist search for psychological causes. In fact it has been suggested that the cause of these disorders may be found deeply within ones cultural expectations of how non organic complaints may present in socially acceptable ways and as such are subject to changes over decades from one syndrome to another. The prevalence of conversion disorder in the general population reported is between 5 and 22 per 100,000 persons. According to one of the systematic review done in a pediatrics neurology unit in the west of England, the prevalence of conversion disorder was 10%. In an Indian study on conversion disorders among children and adolescents, the occurrence was 31%
among inpatients and 15% among outpatients. It was noted that in Asian culture, patients with 'medical' symptoms are more willingly brought for consultation than those with psychiatric symptoms alone.  

**Management of Conversion Disorder**

The management still remains controversial as it challenges our basic ideas about the concept of disease in psychiatry, illness behavior and perhaps our world view. It is ironic to note that conversion disorder is treated in most inhuman way. Prevalent treatments include use of spirit ammonia in emergency settings, other forms of unsubstantiated treatments are also used. Mostly beating up for taking out the Djinns is the commonly used treatment for conversion disorder by traditional healers in rural areas of Asian sub continent. Overall there is lack of any systematic endeavor or data for the treatment of conversion disorder.

This review paper was concerned with finding and reviewing the recent evidence for the management of conversion disorder.

**Methods**

We did a systematic literature search on Medline using the following key words
1. Conversion Disorder.
2. Dissociative Disorders.
3. Hysteria.
4. in conjunction with management, outcome and treatment.

The literature search was supplemented with the search from Extra Medline using the same key words and the references sited at the end of the relevant articles.
Results

We found one hundred and thirty seven articles out of them ten were pertinent to our review as shown in Table 1.

Interventions used in the reviewed articles were:

1. Hypnosis and self Hypnosis
2. Psychoanalytical Intervention
3. Behavioral Intervention
4. Paradoxical Intervention
5. Treatment by strong suggestion
6. Trans-cranial Magnetic Stimulation

Table 1: The recent evidence for the treatment of Conversion Disorder from the articles reviewed.

<table>
<thead>
<tr>
<th>Authors Name/Country</th>
<th>Study Design</th>
<th>Sample Size</th>
<th>Intervention(s)</th>
<th>Outcome Measures</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Franny C Moene et al/Netherlands(^{11})</td>
<td>Randomized controlled trail of additional effect of hypnosis</td>
<td>45(24 exp&amp; 21 in control group)</td>
<td>Additional effect of Hypnosis</td>
<td>VRMC, ICIDH, SCL 90, SHCS</td>
<td>Significant symptom reduction found independent of the treatment condition &amp; the additional effect of hypnosis didn't effect treatment outcome</td>
</tr>
<tr>
<td>Ahmat Ataoglu et al/ Turkey(^{12})</td>
<td>Randomized control</td>
<td>30(15 PI &amp; 15 control)</td>
<td>Paradoxical therapy VS Diazepam Therapy</td>
<td>Scores on HARS, frequency of attacks within the past week.</td>
<td>PI Group 14 (93.3%) responded well at 6 weeks therapy while DT group 9 (60%) responded well, the scores on HARS decreased significantly in both the groups.</td>
</tr>
<tr>
<td>Hafeiz H.B(^{13})</td>
<td>Group study with no control design</td>
<td>61</td>
<td>Treatment by suggestion</td>
<td>Symptoms reduction</td>
<td>All symptoms were removed after 12 months follow up only 12 patients relapsed</td>
</tr>
<tr>
<td>Authors</td>
<td>Type of Report</td>
<td>Treatment</td>
<td>Description</td>
<td>Outcome</td>
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</tr>
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<td>-------------------------</td>
<td>----------------</td>
<td>------------------</td>
<td>----------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------</td>
<td></td>
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<tr>
<td>Carlos SL et al/</td>
<td>Case Report</td>
<td>rTMS</td>
<td>rTMS used in patient with conversion motor type, with a paralysis of the right arm</td>
<td>Complete recovery to regain limb function occurred in 12 weeks</td>
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<tr>
<td>Germany</td>
<td></td>
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<tr>
<td>Barbara Milrod/USA</td>
<td>Case Report</td>
<td>Psychoanalysis</td>
<td>Verbal Articulation of unconscious fantasies underlying the symptoms of CD</td>
<td>4 years of analysis resulted in eradication of the conversion</td>
<td></td>
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<tr>
<td>Peter B.B/USA</td>
<td>Two Case Reports</td>
<td>Self Hypnosis</td>
<td>Self hypnosis used as the treatment of CD in 2 cases.</td>
<td>Self hypnosis, Hypnotic imagery that would create bodily movement to induce relaxation &amp; insight helped in recovery</td>
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<td>Alper S/Turkey</td>
<td>Case report</td>
<td>Threat of Surgical Treatment</td>
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<td>The therapeutic power of suggestion improved hysterical conversion reaction in few minutes</td>
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<tr>
<td>Campo JV et al/USA</td>
<td>Case report</td>
<td>Behavior Intervention</td>
<td>Negative reinforcement to treat persistent right arm pain &amp; immobility</td>
<td>After 3 months BI using negative reinforcement helped resolve symptoms rapidly</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amari A et al/USA</td>
<td>Case report</td>
<td>Behavior Intervention</td>
<td>Treat functional hypophonia</td>
<td>Deferential reinforcement in the form of written and verbal feedback was effective in shaping normal speech</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Khattak T et al/Pakistan</td>
<td>Randomized control trial</td>
<td>60(30 BT&amp;30 CG)</td>
<td>Behavior Intervention</td>
<td>Reduction in the number of hysterical</td>
<td>Majority of the patients of</td>
</tr>
</tbody>
</table>
seizures. intervention group showed marked reduction in the number of seizures and level of anxiety & depression as compared to control group.

Discussion

The literature regarding management of conversion disorders was scanty. Only few control trials were conducted in that area. Even control trials had serious methodological limitations, for instance no double blind control trials were found after extensively searching the literature. Most of the studies were conducted with small sample sizes and with inadequate control. In some studies even the comparisons were flawed e.g. Paradoxical Intervention vs Diazepam. The outcome measures (dependent variables) were poorly defined in most of the studies. There was lack of follow up sessions which was very important in the management of conversion disorders. For example, only one study had follow up period of six months. Associated psychopathology such as depression and anxiety were not addressed in most of the studies. Most of the literature did not explain the treatments used for conversion disorders adequately.

Most of the recent literature reviewed was concerned with Behavioral Interventions and Hypnosis as the management for conversion disorder. Behavioral Interventions were generally found to be more effective treatment program for the management of conversion disorders. Paradoxical Intervention was also established to be successful in reducing both conversion symptoms and associated anxiety. According to the literature regarding management of conversion disorders Hypnosis was not established to be extremely effective for the treatment of conversion symptoms as considered in preceding times and also did not help in the lessening of conversion symptoms and gaining of insight.

The conventional approach towards treatment of hysteria was based on providing the insight to the patient. The literature reviewed rarely addressed that issue. Clinicians considered that conversion patients present as a spectrum, therefore, some patients needed insight before change and others required change before insight. In conversion disorders insight is the outcome of successful control over symptoms and the insight can strengthen and secure change once it occurs.
Limitations

This review is limited to the treatment of adult conversion disorders. As Medline Journals do not adequately cover Journals from developing countries we were unable to get articles from journals that are not available on line that’s why only literature published in journals is reviewed. Review is narrow to the recent studies as old studies includes broad concept of hysteria in which somatization disorder was also incorporated. There is lack of Placebo control trials which needs to be conducted.

Future direction

With more than 1/3rd of the population below the poverty line conversion disorder is here to stay in the developing countries of the world. Collaborative efforts are needed between the research centers for devising the effective interventions which are time limited and cost effective. Testing these interventions and building the evidence is of utmost important for the appropriate management of conversion disorders.

References


7. Admission registers of Psychiatry Unit, Govt. Lady Reading Hospital, Peshawar, Pakistan.


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VALIDATION AND PSYCHOMETRIC PROPERTIES OF BAHASA MALAYSIA VERSION OF THE DEPRESSION ANXIETY AND STRESS SCALES (DASS) AMONG DIABETIC PATIENTS

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ABSTRACT

Background: Having a validated questionnaire in any field would nurture a research path in that particular area. The aim of this study was to validate the Depression Anxiety Stress Scales 21-item (DASS-21) Bahasa Malaysia (BM) version among clinical subjects who were diabetic patients. Objectives: To determine the reliability and construct validity of the BM DASS by looking at internal consistency and exploratory factor analysis respectively. Methods: The BM DASS was administered to a total of 153 diabetic patients. These patients were selected when they came to 15 retail pharmacies all over the Klang Valley. Results: The BM DASS-21 had very good Cronbach’s alpha values of 0.75, 0.74 and 0.79, respectively for depression, anxiety and stress subscales. For construct validity, it also had good factor loading values for 17 out of 21 items (.31 to .75). Conclusions: The results of this study entrenched the evidence that the BM DASS-21 had excellent psychometric properties and therefore it is suitable to be used for the Malaysian clinical population.

Key words: depression, anxiety, stress, reliability, validity, Bahasa Malaysia.

Introduction

The Depressive, Anxiety and Stress Scale (DASS) is designed to measure depressive, anxiety and stress levels concurrently. The original version of DASS is 42-item. DASS 21-item is a modified and shorter version¹. It is a self-report instrument which requires no special skills to administer. Each of the three subscales of DASS is interrelated with one another ²³. The DASS-21 has been translated in various languages and validated in different populations. Currently there are a handful of validated questionnaires in Bahasa Malaysia (BM). An earlier study on BM DASS-21 showed that DASS-21 had...
good psychometric properties for the Malaysian general population. Further evidence is needed to look at psychometric properties of this version among clinical subjects in order to say that this BM version is also reliable to be used in clinical setting. In this study, the authors are focusing on the efforts of reliability and validity of this version among diabetic patients.

This project is part of a bigger project which is to determine the risks factors of depression and other psychiatric morbidities among diabetic patients by the Faculty of Pharmacy, University Technology of MARA (UiTM). Diabetic patients were chosen as it was proven that the occurrence of diabetes cases had increased for the past few years and it will keep on increasing in the future. The Second National Health and Morbidity Study in 1996 revealed that the prevalence of diabetes in Malaysia was 8.2%. This value had increased from the First National Health and Morbidity Study in 1986 which was reported as 6.3%.

Methods

This is a multi-center cross sectional study. The process of translation and pre-test was done in a previous study in accordance to guidelines stipulated in the United State Census Bureau Guideline where 2 forward and 2 back translations were done in parallel by 2 medical and 2 language experts. The BM DASS-21 version used in this project is the same version used in the previous study. The translation of DASS-21 was not repeated in this project. The whole process of translation and validation of BM version is summarized in the past article. A special permission from the original author of DASS (Professor Dr. Peter Lovinbond) was also acquired before the commencement of this study. Informed consent was obtained from the participants after the nature of the procedure was fully explained. The population selected for validation purpose in this study was attendees of retail pharmacies in Klang Valley which comprises of five administrative parts: the Federal Territory of Kuala Lumpur, and the four districts of Hulu Langat, Gombak, Petaling and Klang in the state of Selangor. The pharmacies were identified through the list of retail pharmacies obtained from Pharmacy Division, Ministry of Health Malaysia. Copies of the questionnaire were distributed to 15 retail pharmacies all over the Klang Valley with the aim of getting the result that best represents the population of Klang Valley. A permission to circulate the questionnaire was obtained from the in-charge pharmacists as well as from the owners of the retails involved. The selection of the retail pharmacies was based on quota convenience sampling. All participants were ensured of the confidentiality and understood that the information gathered will only be used for research purposes. Various subjects were being approached from all ages, gender, ethnicity and socio-economic status. Heterogeneous participants were taken care of in the aspects of age, gender, race and socio-economic class. Composition of ethnic groups was tried to reflect the actual Malaysian population based on the Malaysian Statistic Department (2005) where 54.1% were Malays, 25% were Chinese, 7.5% were Indians and 13.2% from other races.

The inclusion criteria for the subjects: 1. Age of the subjects was between 20 - 60 years old 2. Participants were all diabetes patients and able to give written consent.

The exclusion criteria of this study include: 1. Those who were not conversant in BM.
Results

A total of 300 copies of BM DASS were distributed to all the identified pharmacies but only 200 respondents agreed to participate or fulfilled the inclusion criteria. Out of 200 who answered the questionnaires, 67 were considered as drop out due to incomplete data and reasons provided in the exclusion criteria. Only 153 samples were available to undergo the analysis.

Table 1: Demographic profile of the subjects

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years old)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-40</td>
<td>31</td>
<td>20.3</td>
</tr>
<tr>
<td>41-50</td>
<td>24</td>
<td>15.7</td>
</tr>
<tr>
<td>51-60</td>
<td>98</td>
<td>64.0</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>75</td>
<td>49</td>
</tr>
<tr>
<td>Female</td>
<td>78</td>
<td>51</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malay</td>
<td>120</td>
<td>78.4</td>
</tr>
<tr>
<td>Chinese</td>
<td>16</td>
<td>10.5</td>
</tr>
<tr>
<td>Indian</td>
<td>17</td>
<td>11.1</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>4</td>
<td>2.6</td>
</tr>
<tr>
<td>Married</td>
<td>133</td>
<td>86.9</td>
</tr>
<tr>
<td>Divorced / widowed</td>
<td>16</td>
<td>10.5</td>
</tr>
<tr>
<td>Educational Level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary School</td>
<td>23</td>
<td>15.0</td>
</tr>
<tr>
<td>PMR/SPR</td>
<td>25</td>
<td>16.4</td>
</tr>
<tr>
<td>SPM/SPMV/STPM</td>
<td>69</td>
<td>45.1</td>
</tr>
<tr>
<td>College Graduate</td>
<td>36</td>
<td>23.5</td>
</tr>
<tr>
<td>Employment Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>73</td>
<td>47.7</td>
</tr>
<tr>
<td>Part-time</td>
<td>7</td>
<td>4.6</td>
</tr>
<tr>
<td>Unemployed</td>
<td>32</td>
<td>20.7</td>
</tr>
<tr>
<td>Retired</td>
<td>41</td>
<td>26.8</td>
</tr>
</tbody>
</table>

Among the 153 subjects who participated in this study, 51% (n = 78) were female (Table1). The majority of the subjects were in the age range of between 51 to 60 years old (62%). 78.4% of them were Malays, 10.5% were Chinese and 11.1% were Indians (Table 1). The subjects who participated in this study were heterogeneous in the aspect of socio-economy such as level of education, marital status and occupation.

For reliability, the internal consistency of this version revealed good Cronbach’s alpha values. For depressive, anxiety and stress subscales, Cronbach’s alpha values were 0.75, 0.74 and 0.79 respectively.

Validity was determined by Confirmatory Factor Analysis (CFA) and is summarized in Table 2. Table 2 shows factor loadings for confirmatory factor analysis (CFA) of each item in BM DASS-21. From this table, it proved that BM DASS-21 managed to delineate its items into 3 main categories (depression, anxiety and stress). All items except four had factor loadings of more than .30, which was good.

The correlation between depression and anxiety subscales was .41. A positive value indicated that there was a positive correlation between the two analyzed variables. This indicates that depressed subjects would also experience anxiety symptoms. The correlation between depression and stress subscales was .65 which is stronger. The correlation between Stress and Anxiety was .59. Positive correlation values imply that stress symptoms are intercorrelated with anxiety and depressive symptoms among the participants.
Table 2: Factor loadings based on confirmatory factor analysis for each item in BM DASS-21

<table>
<thead>
<tr>
<th>Item</th>
<th>Depressive</th>
<th>Anxiety</th>
<th>Stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>D3</td>
<td>.52</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D5</td>
<td>.62</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D10</td>
<td>.61</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D13</td>
<td>.31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D16</td>
<td>.62</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D17</td>
<td>.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D21</td>
<td>.18*</td>
<td>.48</td>
<td></td>
</tr>
<tr>
<td>A2</td>
<td>.53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A4</td>
<td>.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A7</td>
<td>.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A9</td>
<td>.33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A15</td>
<td>.21*</td>
<td>.49</td>
<td></td>
</tr>
<tr>
<td>A19</td>
<td>.76</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A20</td>
<td>.11*</td>
<td>.76</td>
<td></td>
</tr>
<tr>
<td>S1</td>
<td>.36</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S6</td>
<td>.37</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S8</td>
<td>.29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S11</td>
<td>.41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S12</td>
<td>.31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S14</td>
<td>.36</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S18</td>
<td>.50</td>
<td>.04**</td>
<td></td>
</tr>
</tbody>
</table>

*Poor value

Discussion

This study managed to draw a conclusion that BM DASS-21 had good psychometric values for internal consistencies and confirmatory factor analysis. Results in this study yielded Cronbach’s alpha values of 0.75, 0.74 and 0.79 respectively for depression, anxiety and stress subscales as compared to 0.84, 0.74 and 0.79 in the past study for the same version by Ramli et al, (2007)\(^3\). The only difference is a lower value for depressive subscale but exactly similar for anxiety and stress.

For exploratory factor analysis, items 15, 20 and 21 had poor outcomes in the current study. However, these items had good factor loadings in the previous study (.39-.62). Conversely, items 7 and 12 had modest factor loading in this study but had poor values in the previous study. The other interesting aspect that we observed in the exploratory factor analysis is that this study replicated the same result with the past study that among all items, item 18 had the poorest factor loading value of 0.04 as compared to 0.20 previously. As described earlier, item 18 was more of a description of individual’s personality rather than the psychological reaction toward an unpleasant experience [3]. Since both studies demonstrated similar findings, there is a strong indication to replace this item with other alternative. These findings were against our earlier perception that clinical subjects would draw an equivalence or better result as was seen in the other studies\(^6,7\).

Correlations (inter-correlated) between scales obtained in this study (.41-.65) were slightly lower as compared to figures obtained in the previous study. Nevertheless, these figures were comparable with the study done by original authors (.54) [8]. This study confirmed the correlation between depressive symptoms and diabetes by using the DASS-21 scale. Consistent with previous studies, results from this study illustrated that depressive symptoms...
experienced by diabetes patients were significantly related to anxiety and stress as suggested by Zhang et al in their studies involving Chinese patients with Type 2 Diabetes. Overall summerrization of DASS-21 data proposed that Depression, Anxiety and Stress were significantly associated with each other and may coexist mutually. The correlation values showed that there are significantly high correlations between depression with both anxiety and stress scale. Therefore, from the correlation table above, it can be simplified that Depression, Anxiety and Stress were significantly associated with each other and may coexist in diabetes patients.

Again, this study also had a limitation in the aspect of study population as the Chinese were under represented. Similar pattern of under presentation is also found in other studies. We noticed that there a substantial number of Chinese subjects selected had language barriers.

Conclusion and Recommendation

By completion of this recent study, we can say that BM DASS-21 is applicable not only for non-clinical subjects but also for clinical subjects, particularly diabetic patients. Further efforts on criterion validity of the BM DASS-42 and the DASS-21 are underway in which comparison is done with clinical diagnosis and the Hospital Anxiety and Depression Scale.

Acknowledgement

We would like to convey our heartfelt gratitude to the subjects and pharmacists who had given their consents and cooperation in this study.

References


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ORIGINAL PAPER

THE RELIABILITY OF MALAY VERSION OF LIST OF THREATENING EXPERIENCES QUESTIONNAIRE: A STUDY ON A GROUP OF MEDICAL STUDENTS IN MALAYSIA

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Abstract

Objective: The aim of this study is to translate the original English version of List of Threatening Experiences (LTE) into Malay and to test the reliability on a group of medical students. Method: The LTE was translated into Malay and back-translated. The Malay LTE (LTE-M) was then tested on a total of 237 medical students. They were given LTE-M, General Health Questionnaire (GHQ), Beck Depression Inventory (BDI) and English version of LTE. A week later, these students were again given the LTE-M. Results: The parallel and test-retest reliability were satisfactory for 7 out of the 12 event categories (Kappa=0.67-0.88). However 3 event categories were not reported. There was no statistical significant difference in the BDI and GHQ scores between the students with and without threatening experiences. Conclusion: The parallel and test-retest reliability of the LTE-M were acceptable. An association between the threatening experiences and increased disorders was not established.

Keywords: Threatening experiences, reliability, Malay version, life events, students

Introduction

Life events are defined as sudden changes, which may be positive or negative in an individual’s social life which disrupt its normal course. Since the original work of Holme and Rahe, a large amount of research was focus on the concept of stressful life events for the past decades. Life events which represent recent changes in the environment were one of the many social factors which have been found related to psychiatric disorders. Multiple studies show that life events are experienced with a greater than expected frequency prior to the onset of mental disorders.

Various long and complex inventories have been developed for research in stressful life events. These comprised of methods by
means of semi-structured interview, structured interview\textsuperscript{10} or checklist based on inventories of life events.\textsuperscript{11,12} For practical and economic constraints oblige research worker, an inventor method with a brief list of significant life events is needed.\textsuperscript{13} The List of Threatening Experiences (LTE) was designed by Brugha and colleagues\textsuperscript{13} to overcome the labor-intense time and expense of more lengthy interview. It is a 12 items instrument measuring common life events that tend to be threatening. Common events that were unlikely to be of etiological importance were omitted in the instrument (for example, promotion at work or a minor financial problem).\textsuperscript{14} The LTE was shown to have good test retest reliability, good agreement with informant information and concurrent validity. It is particularly recommended by the author for the use in psychiatric, psychological and social studies. The aim of this study is to translate the original English version of LTE into Malay version. The reliability and responses to the questionnaire were then tested on a group of medical students.

**Methods**

Approval from the Medical Ethical Committee (MEC), University Malaya Medical Centre, Kuala Lumpur was obtained to conduct the study. Permission from the original author of the instrument was also obtained.

**Stage 1**

The English version of LTE was translated into Malay by two doctors who were bilingual (Malay and English). Another two doctors who were also bilingual and blinded to the original LTE, back-translated the Malay version of LTE. The process was following the back-translation technique.\textsuperscript{16}

**Stage 2**

The translated version (LTE-M) was pilot tested on 20 staff nurses from psychiatric ward, University Malaya Medical Centre. Some items in the translated version needed minor revision and were modified further. The finalized version was also reviewed by three medical officers and a psychiatrist.

**Stage 3**

A group of medical students from Faculty of Medicine, University of Malaya, Kuala Lumpur (Year 1, 4 and 5) were approached for the study. A total of 237 agreed to participate and completed the study. They were given the following questionnaires:

1. The Malay version of LTE (LTE-M)
2. Beck Depression Inventory (BDI)\textsuperscript{17}
3. General Health Questionnaire (GHQ)\textsuperscript{18}

As all the participants were bilingual, they were given the English version of LTE immediately after the initial assessment. One week later, these students were again required to complete the Malay version of LTE (the sequence of the items was shuffled).

**Scoring**

The initial binary scoring is used. A score of 1 indicates if the life event has happened over the past 6 months, and a score of 0 if it has not. The number of events that had happened was then counted. It was scored
on the basis that the more life events a subject had been through, the higher the score and therefore the greater the likelihood of some form of longer term impact on him or her.

**Statistical Analyses**

The results were analyzed using Statistical Package for Social Sciences version 13.0. The parallel and test-retest reliability analysis using Kappa statistic was performed. Comparison of BDI and GHQ score was conducted by using Independent t test.

**Result**

The medical students ranged from 19 to 25 years old. There were 73 males and 164 females.

_Distribution of the number of Threatening Experiences (TE) reported by the students_

**Figure 1** Frequency of positive responses to the List of Threatening Experiences

![Frequency of Positive Responses to The List of Threatening Experiences](image)

Figure 1 shows the distribution of the frequency of positive responses to the LTE-M. Life event number 10 (You had a major financial crisis) and number 4 (A close family friend or another relative died) were the two commonest events reported by the students, 13.5% and 11.4%. It was followed by life event number 2 (A serious illness, injury, or assault happened to a close relative), 9.3%. Life events number 5 (You had a separation due to marital difficulties), number 8 (You became unemployed or you were seeking work unsuccessfully for more than one month) and number 9 (You were sacked from your job) were not reported by the students.

<table>
<thead>
<tr>
<th>Number of LTE-M reported</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>134</td>
<td>56.5</td>
</tr>
<tr>
<td>1</td>
<td>60</td>
<td>25.3</td>
</tr>
<tr>
<td>2</td>
<td>33</td>
<td>13.9</td>
</tr>
<tr>
<td>3</td>
<td>6</td>
<td>2.5</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>0.8</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>0.8</td>
</tr>
</tbody>
</table>
Table 1 shows the distribution of the total number of life events reported by each student. Majority of the student did not have any recent threatening experiences (TE). A quarter of the subjects have one recent TE. Only 10 students (4.2%) have 3 or more recent TE.

Table 2 Parallel and test-retest reliability of the LTE-M and of each event category

<table>
<thead>
<tr>
<th>Life events category</th>
<th>% of reporting</th>
<th>Parallel reliability</th>
<th>Test-retest reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Cohen’s Kappa</td>
<td>p</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2-tails)</td>
<td></td>
</tr>
<tr>
<td>You yourself suffered a serious illness, injury, or an assault</td>
<td>0.8</td>
<td>0.84</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>A serious illness, injury, or assault happened to a close relative</td>
<td>9.3</td>
<td>0.22</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Your parent, child, or spouse died</td>
<td>0.4</td>
<td>0.67</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>A close family friend or another relative (aunt, cousin, grandparents) died</td>
<td>11.4</td>
<td>0.88</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>You had a separation due to marital difficulties</td>
<td>0</td>
<td>-</td>
<td>NA</td>
</tr>
<tr>
<td>You broke off a steady relationship</td>
<td>8</td>
<td>0.92</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>You had a serious problem with a close friend, neighbour, or relative</td>
<td>6.3</td>
<td>0.79</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>You became unemployed or you were seeking work unsuccessfully for more than one month</td>
<td>0</td>
<td>-</td>
<td>NA</td>
</tr>
<tr>
<td>You were sacked from your job</td>
<td>0</td>
<td>-</td>
<td>NA</td>
</tr>
<tr>
<td>You had a major financial crisis</td>
<td>13.5</td>
<td>0.86</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>You had problems with the police and a court appearance</td>
<td>0.8</td>
<td>0.18</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Something you valued was lost or stolen</td>
<td>8.8</td>
<td>0.88</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>

NA = not applicable
Parallel reliability

Table 2 shows the result of the parallel reliability for each item in the LTE-M with the original LTE as reported by the students. Item 2 and 11 were found to be unreliable (Kappa < 0.40, p < 0.01). As a rule of thumb, the reliability for item 3 and 7 were substantial (Kappa = 0.60-0.79, p < 0.01). The parallel reliability of other items were outstanding (Kappa > 0.8, p<0.01).19

Test-retest reliability

Table 2 also provides information regarding the test-retest reliability for each item in the LTE-M as reported by the students after one week interval. Item 2 and 11 were found to be unreliable (Kappa < 0.40, p < 0.01). The test-retest reliability for item 7 and 12 were outstanding (Kappa > 0.8, p<0.01). The rest were substantially reliable (Kappa = 0.60-0.79, p < 0.01). 20

Table 3 Comparison the BDI and GHQ scores between students with (2 or more) and without (1 or none) recent threatening experience(s) using Independent t test

<table>
<thead>
<tr>
<th>Recent threatening experience(s)</th>
<th>BDI Score</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D.</td>
<td>t</td>
<td>p</td>
<td>95% CI</td>
</tr>
<tr>
<td>Yes</td>
<td>7.91</td>
<td>6.06</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>7.30</td>
<td>5.28</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Differences</td>
<td>0.61</td>
<td>0.74</td>
<td>0.33</td>
<td>0.41</td>
<td>-0.84,2.07</td>
</tr>
<tr>
<td>GHQ score</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>59.01</td>
<td>10.07</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>59.99</td>
<td>9.21</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Differences</td>
<td>-0.98</td>
<td>1.26</td>
<td>-0.78</td>
<td>0.44</td>
<td>-3.46, 1.49</td>
</tr>
</tbody>
</table>

Table 3 shows the comparison of BDI and GHQ scores between the students with and without threatening experiences in the past 6 months. There was no significant different between the two groups.

Discussion

The choice of the 12 events in the original LTE designed by Brugha and colleagues was based on a study on 310 samples from the general population and 74 psychiatric out patients with affective disorders. Life events which occurred rarely were excluded from the LTE.13 However, 3 out of the 12 event categories were not reported by the students in this study. This could be explained by the relatively homogenous characteristic of the study group. The subjects in this study were still studying, young and highly educated. As a result, events categories with regard to marital separation and job issues would be irrelevant to them.

Generally, the LTE-M was fairly acceptable to this study group. Excluding items number 5, 8 and 9 which were not reported, the parallel and test-retest reliability for item number 2 and 11 were poor. For the other items, the reliability was satisfactory. It was emphasized by the original author that the results of any reliability of the instrument may depend on the particular characteristics of the population under study. It was advised to re-evaluate the reliability of the questionnaire when used in the other population.15

As suggested by the author, it is useful to consider the association of life events with increased risk of disorders in the research of
As a result, the researchers in this study attempted to determine the association of depressive symptoms and other psychiatric symptoms with threatening experiences by the students. The result shows that there was no significant difference between the score of BDI and GHQ between those with and without threatening experiences. The result was limited by the small number of samples who had recent threatening experiences especially for 2 or more events. Furthermore, the extent of the threat for each event category was not assessed in this study.

As a conclusion, the parallel and test-retest reliability of the LTE-M are acceptable. However 3 events in the LTE-M were not reported by the study group. An association between the threatening experiences and increased disorders was not established in the study. Improvement in the study design and population with diverse characteristics are required for the future research in the validation of the LTE-M.

Limitations

Life events are highly related to the individual’s living environment and social background. The lack of diversity of the characteristics in the study group limited the study on the event categories in the LTE chosen by the original authors.

The LTE-I (the interview version) which developed by the original author was not used in this study. It consists of detailed probing questions for each of the LTE categories, for use in a semi-structured interview. The LTE-I may help in the administration of the LTE.

The binary scoring for the LTE was used in this study. The severity of the threat of the events was not taken into consideration. Rating of the threat by using the Likert scale (i.e. mild, moderate and marked) may help in the study of the impact of the threatening experiences and its association with increased disorders.

Acknowledgement

We would like to thank the students who participate in this study and Dr Sapini Yaacob from Department of Psychological Medicine, University Malaya Medical Centre for her assistance. We are also very grateful to Professor Brugha his generous permissions and support for using his instruments, namely the LTE.

References


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A CASE-CONTROL STUDY TO ASSESS THE COMORBIDITY OF DEPRESSION AND MIGRAINE

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**Psychiatry Department, G.G.S. Medical College Hospital, Faridkot

Abstract

Background: Migraine is a common neurological disorder affecting around 18% of females and 6% of males. The present study was undertaken to identify and assess the impact of coexisting depression in diagnosed cases of migraine. Material and Methods: A hospital based case control study was conducted on 450 patients suffering from migraine of all ages and both sexes attending psychiatry out patient department at civil hospital, Gurdaspur city in Punjab. International headache society criteria for the diagnosis of migraine and 21-item Hamilton rating scale for depression was used. Migraine with depression (MWD) cases were compared with migraine without depression as controls (MC). Duration and frequency of migraine, comorbidity with depression were measured. Results: Out of 450 patients, 200 were MWD and 200 were MC patients. Among MWD and MC, females were common: 73% (146) and 75% (150) respectively. Of the females having MWD, 50% (73) belonged to age group 31-40 years as compared to females with MC where 58% (87) were from age group 21-30 years. Among the males, maximum number of patients belonged to age group 20-30 years for MWD and MC i.e 48% (26) and 57% (29) respectively. 50% of MWD reported having migraine attacks for five years or more years, whereas only 16% of MC had the similar duration (P <0.01). 80% of (n=160) of MWD reported maximum disability during the headache as compared to 64% (n=128) of MC. 70% (140) of MWD had an average frequency of 4 or more attacks per month compared to 45% (90) of MC having one episode per month or less. Conclusion: Patients suffering from migraine with long history and high frequency might benefit from psychiatric evaluation and addition of antidepressants for their treatment.

Keywords: Migraine, depression, comorbidity.

Introduction

Migraine is a common neurological disorder affecting about 18% of females and 6% of males. It imposes a high socio-economic burden on society and compromises the quality of life in migraine patients. Major depression and migraine usually begin in early life. Depression is four times more common in migraine than in general
population or in patients with other chronic medical conditions.\(^2,3\) The lifetime prevalence of dysthymia in migraine patients is approximately 3.2\%.\(^3\) The lifetime prevalence of posttraumatic stress disorder is approximately 8\% and it is twice more common in women than men. Furthermore, posttraumatic stress has been shown to worsen chronicity and disability of chronic migraine patients.\(^4\)

A previous similar study conducted found that more than 10\% of the study patients had depressive personality, which was highest of all the other personality types noted.\(^5\) A psychiatric disorder coexisting with a physical illness is likely to cause more distress by the symptoms of the illnesses, a poor response to treatment, frequently unnecessary investigations. Evidence based guidelines advocate the use of amitriptyline and sodium valproate in the prophylaxis of migraine, although other antidepressants, anticonvulsants and antipsychotic agents also play some role in the treatment of migraine.\(^6\)

The knowledge of the co-morbidity of migraine and depression and treatment of both conditions improves the burden of migraine socially and economically. The goal of the present study was to identify the coexisting depression in diagnosed cases of migraine and to see its impact on the functioning of daily routine life.

**Material and Methods**

For the diagnosis of migraine a questionnaire was developed based on the International Headache Society (IHS) criteria for the diagnosis of migraine.\(^7\) For the diagnosis of depression, 21-item Hamilton Rating Scale for depression (HRDS) was used.\(^8\) This was a hospital-based case-controlled study carried out in the Department of psychiatry at Civil Hospital, Gurdaspur city in Punjab. Out of all the patients attending the psychiatry OPD of this hospital, 450 patients were found to have migraine according to Headache International Society criteria for the diagnosis of migraine.

The patients attending our OPD generally belong to middle class socio-economic class. Investigations would have been an additional burden to their financial setback. Therefore, only those patients were selected for the study that had not found any change in the character or location of the headache. However, in doubtful cases organic lesion was excluded with CT Scan/MRI. The patients who fitted the IHS criteria for migraine were interviewed with 21-item Hamilton Rating Scale for Depression. The migraine patients having score of <7 were selected as controls (MC), and those having >10 were taken as cases of migraine with definite depression (MWD). Patients having borderline scores i.e., from 8-10 were not included in the study. All the consecutive patients suffering from migraine coming to attend outdoor patient department of psychiatry department of hospital were included in the study. Further inclusion criteria were patients of either sex of age more than 10 years or old and up to 40 years of age, non pregnant females, informed written consent was taken from patient. Exclusion criteria were refusal to give informed written consent, pregnant females, patients suffer from epilepsy, mental retardation or any other organic brain disease.

In this way 200 cases of MWD were selected, who were then compared with 200 age and sex matched MC. Both MWD and MC were divided into three age groups: 11-20 years; 21-30 years and 31-40 years. Duration of headache was also divided into
three groups: those having headache for 5 years or less, those having it for 6 to 9 years, and those having it for 10 years or more.

A maximal disability during the migraine attack was taken as severe disturbance in social and occupational functioning of daily routine life of patient. A moderate disability was taken as inability to carry out routine physical activities. Regarding frequency of headaches, patients were divided into three groups: 4 or more attacks per month, 2-3 attacks per month, and one attack per month or less.

Results

Out of 450 patients of migraine, 200 were MWD on the basis of 21-item HRDS. These were then compared with 200 age and sex matched Migraine Controls (MC). The sex distribution and age-group of each case and control are shown in Table I and Table 2.

Table 1. The sex distribution of each group

<table>
<thead>
<tr>
<th>Type of patients</th>
<th>Males % (N)</th>
<th>Females % (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Migraine with depression</td>
<td>27% (54)</td>
<td>73% (146)</td>
</tr>
<tr>
<td>Migraine control</td>
<td>25% (50)</td>
<td>75% (150)</td>
</tr>
</tbody>
</table>

Table 2 The age-group distribution of each group according to sex

<table>
<thead>
<tr>
<th>Age group</th>
<th>Migraine with Depression</th>
<th>Migraine Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Males % (N)</td>
<td>Females % (N)</td>
</tr>
<tr>
<td>11-20</td>
<td>16% (9)</td>
<td>17% (25)</td>
</tr>
<tr>
<td>21-30</td>
<td>48% (26)</td>
<td>33% (48)</td>
</tr>
<tr>
<td>31-40</td>
<td>36% (19)</td>
<td>50% (73)</td>
</tr>
</tbody>
</table>

Regarding duration of headache, 50% of MWD had these attacks for 10 or more years compared to 16% (32) in MC. 80% (n=160) of MWD reported maximal disability during the headache as compared to the 64% (128) of MC. Only 20% (4) of MWD said that they had moderate disability during the attack whereas 36% (72) of MC had this much disability \( (P<0.05) \).

Majority of MWD, 70% (140), had an average frequency of 4 or more attacks per month, followed by 20% (40) had 2-3 attacks, and only 10% (20) had one attack per month or less. Among MC, 18% (36) had one attack per month or less, 37% (74) had 2-3 attacks and only 45% (90) had 4 or more attacks per month \( (P =0.001) \).

Out of initially selected 450 patients, 217 fitted the criteria for migraine without aura, 184 had migraine with aura, and 49 patients had mixed patterns of migraine variants. Two patients had migraine without aura with ophthalmoplegic migraine (sixth cranial nerve palsy). 75% of patients had unilateral headache, which changed location. Nearly 75% percent of patients could identify a trigger for their attacks and 90% of them cited stress as a cause. Approximately 38% of the patients had a positive family history, usually for recurrent headaches. Among
MWD, score on the depression subscale of HRDS was slightly higher for females than males. The average HADS score for females and males was 16.2 and 15.5 respectively, giving an average of 15.85 for MWD cases. For MC, the average depression score was 6, with negligible variation for females and males. The age group, which showed maximum depression according to these scores, was 30-40 years group having an average score of 15, both for males and females. Age group of 20-30 years had a score of 12 for females and 12.5 for males. Age group of 10-20 years showed an average of 13 for females and 14 for males. This indicates a more severe degree of depression among adolescent male migraine patients of the study.

Discussion

Migraine with depression was observed in 44.44% of the study patients, selected on the basis of IHS criteria for migraine and 21-item HRDS for depression. Working with the same depression scale, Juang et al found the frequency of depression disorders to be about 57% in their headache patients.9 and Devlen in 20% of his migraine patients.10 In a population-based case control study, Lipton et al determined that 47% of migraine suffers experienced depression, compared to 17% of people without migraine.11

Sial found the evidence of depression to be about 52% in his study patients and cites psychological factors to be the main provokers of acute migraine attacks.12 In our study, it was noted that MWD had a more prolonged history of the recurrent headaches. Fifty percent of MWD had these attacks for 10 or more years compared to 16% of MC. Moreover, the headaches in MWD were of more severe intensity, more prolonged duration, and a greater frequency than in MC.

Majority of MWD, 70%(140), had an average frequency of 4 or more attacks per month in contrast to 45%(90) in MC. Only 25%(50) of MWD had one attack per month or less compared to 18%(36) among MC. 80%(160) MWD were severely disabled by their headache attacks compared to the 64%(128) of MC having this much disability. Approximately similar results were given by Sial who found that 80% of his study patients could not continue their routine during migraine attacks.12

Depression was found to be more frequent in the fourth decade of life, which is the period of maximum productivity in terms of economy. Agony of the recurrent headache disorder, made worse by the coexisting depression, not only adds to the general suffering of the patient of a chronic condition, but also results in an increase in their social and occupational interference. This observation was supported by Hu, who reported that patients of both sexes aged 30 to 49 years incurred higher indirect costs compared with younger or older employed patients.12

Migraine costs American employers about $13 billion a year because of missed workdays and impaired work function. Annual direct medical costs for migraine care were about $1 billion and about $100 was spent per diagnosed patients.12 Sial reported up to 50 or more lost work days per year; three of his study patients even lost their jobs.12

Thirty eight percent of our study patients had first-degree relative affected by recurrent headaches including migraine. Mortimer found that a history of maternal depression and migraine was significantly
more common and proportionately higher in children with abdominal migraine and recurrent abdominal pain. Nearly 75% percent of our patients could identify a trigger for their attacks and 90% of them cited stress as a cause, in combination with other factors or alone. This was quite high as compared to the percentages for stress or anxiety to be a trigger given by Robbins, 62%, this study was however not looking specifically for depression in their migraine patients, the presence of which might indicate an increase proneness to other psychological factors, including susceptibility to stress.

MWD were found to be responding very slowly or poorly to anti-migraine treatment unless an anti-depressant was added to their therapeutic regimen. They become habitual of using analgesics, which in turn is another established cause of headache, the so-called analgesic rebound headaches, and also of hemicrania continua. Vasconcellos in his 98 pediatric and adolescent patients discovered rebound headaches in 47% with 30 of them using analgesic daily. Rapoport on the other hand reports analgesic rebound headaches most likely to occur in patients aged 31 to 40 years. Moreover, there is typically delayed improvement in analgesic rebound headache after the offending agents have been discontinued; at times, it might be necessary to omit medications for 6 months until the almost daily headaches cease. This is quite a difficult job requiring patient understanding and education.

In addition resistant headaches give way to various misconceptions about headache in a poorly educated society, where sources of misinformation outnumber markedly the sources of information. People then resort to various non-medical and non-ethical and even inhumanly treatments provided readily by quacks, false hakeems etc. These situations are not a psychological trauma for the patient alone but also for the family members who keep on hanging in the realm of uncertainty. It should not be forgotten that migraine could even lead to suicidal tendency and suicidal attempts.

Conclusion

Depression, when it is comorbid with the migraine, not only increases the duration, frequency and severity of this primary headache disorder, but also makes it more resistant to treatment. It also produces a deeper impact in impairing the quality of life for the affected person and overall increases the burden of the disease. Migraineurs with long history and high frequency of headaches or patients suffering from migraine with drug-overuse might benefit from psychiatric evaluation and probably addition of antidepressant drugs to their therapeutic regimen.

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REVIEW PAPER

THYROID DISORDERS AND PSYCHIATRIC MORBIDITIES

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Abstract

The functional behavior of the thyroid is fundamental in most diseases and represents the basis for diagnosis and therapy. The status can be euthyroidism, hypothyroidism or hyperthyroidism. The psychiatric manifestation varies in different thyroid status. Those with hypothyroidism were described to have depression, psychosis and cognitive dysfunction. Meanwhile, those with hyperthyroidism were found to have psychosis, aggression, anxiety as well as cognitive impairment.

Keywords: thyroid disease, euthyroid, hypothyroidism, hyperthyroidism, depression, anxiety

Introduction

Thyroid Disorders

Thyroid disorders comprise a large proportion of study in endocrine disorders, other than diabetes mellitus. The last comprehensive classification of thyroid diseases has been reported by the American Thyroid Association in 1969. It is divided into two; abridged and detailed classifications where the former is provided for simplicity and daily usefulness and the latter for hospital diagnoses and for reports in the literature. It was based largely on thyroid function since classification by etiology was considered premature, by pathology was non-useful to the clinician and the clinical evolution and follow up have not yet been evaluated. The functional behavior of the thyroid is fundamental in most diseases and represents the basis for diagnosis and therapy.

Euthyroidism means normal production of thyroid hormones by the thyroid and normal levels in the circulation and at the cellular level. Hyperthyroidism means clinical symptomatology due to excessive circulating and intracellular thyroid hormones which normally shown by low TSH and high fT4 or fT3. The causes include Graves’ disease which is the most common, toxic multinodular goiter, toxic adenoma and thyroiditis. Among the
important clinical features are weight loss despite good appetite, excessive sweating, irritability, anxiety, tremulousness, palpitations, goiter and proximal muscle weakness³.

As for the Graves’ disease, it is usually clinically distinctive; there is a small to moderate, diffuse, firm goiter and around a half of these patients have signs of thyroid-associated opthalmopathy like lid lag, lid retraction, proptosis, extraocular muscle dysfunction, corneal involvement and loss of sight. Less than 5.0% have pretibial myxedema which is better called thyroid dermopathy. Thyroid dermopathy most commonly occurs as non-pitting plaques with a pink or purple color but no inflammatory signs. Hyperplasia of lymphoid tissue, including splenomegaly and thymic enlargement is sometimes found⁴.

Hypothyroidism is almost always due to the lack of thyroid hormone production and inadequate replacement therapy. It is normally diagnosed when TSH is elevated and fT4 is low. The causes include autoimmune thyroid disease like Hashimoto’s thyroiditis, thyroid agenesis and secondary to treatment like post-thyroidectomy or post-radioiodine therapy. Among the important clinical features are apathy, fatigue, cold intolerance, slow speech, weight gain, coarse feature and facial puffiness³.

Subclinical hyperthyroidism is defined as an asymptomatic state in which circulating concentrations of free T3 and T4 are normal but serum sensitive TSH is suppressed. Subclinical hypothyroidism is defined as an asymptomatic state in which circulating concentrations of free T3 and T4 are normal but serum TSH is slightly elevated. Both conditions are not disease entity but a mild stage of thyroid hyper function and hypo function respectively⁵.

Statistic regarding prevalence and incidence of thyroid disorders are difficult to interpret because existing published studies have different significantly in regard to population age range, geographic location and criteria used to define the presence and degree of thyroid failure. Most prevalence studies of thyroid diseases are small and performed in selected groups of the population⁶-⁸.

Thyroid disorders are much more common among female⁶,⁹-¹². Prevalence of thyroid disorders is estimated about 2.0% in female and 0.2% in male¹³. Among the functional disorder of the thyroid, hypothyroidism is the most common with prevalence ranged from 1.0%- 11.7% in female and 0.9%- 5.14% in male whereas prevalence for hyperthyroidism ranged from 0.86%- 2.5% in female and 0.17%- 0.6% in male⁶,¹⁰-¹². As for the sub clinical hypothyroidism, the prevalence is found to range from 9.0%-15.0% and 2.1% for sub clinical hyperthyroidism⁹-¹⁰.

In general, the incidence of thyroid disorder increases with age⁶,⁹. For hypothyroidism, the incidence of new cases is in those aged 70 and is rare under the age of 30⁶-¹². For hyperthyroidism, the incidence is spread over all ages but the commonest cause (Grave’s disease) usually develops between
the second and the fourth decades of life\textsuperscript{6, 9, 14-15}.

There was only handful of study on thyroid in the Asian countries. The studies found that the prevalence also common among females and presence of high percentage of anti microsomal antibodies in the first degree relatives of children with thyroiditis\textsuperscript{16-17}.

In Malaysia, thyroid disorders are the second most common and prevalent endocrine and metabolic disease after diabetes mellitus\textsuperscript{3}. In University Malaya Medical Center, Kuala Lumpur, the same thing applies. The clinical attendance for thyroid patient in the Endocrine Clinic ranged from 250 to 300 patients per months which comprises the majority of the patients attended the clinic\textsuperscript{18}.

**Thyroid Disorders and Psychiatric Morbidities**

Many studies described the psychiatric manifestations of different thyroid status. Those with hypothyroidism were described to have psychosis, cognitive dysfunction and depression. Meanwhile, those with hyperthyroidism were found to have psychosis (mainly paranoia), aggression, anxiety, depression as well as cognitive impairment\textsuperscript{19}.

In a study by Whybrow et al\textsuperscript{19} in 1969, he found that when the hypothyroidism was long standing, the impairment of cognitive function persisted after thyroid replacement therapy. In hyperthyroidism, the impairment was milder, not always recognized by the individual and returned to normal when euthyroidism was reestablished. In hypothyroidism, the depressive affect differed from hyperthyroidism in terms of severity where it is of a major degree in the former. A high subjective level of anxiety was noticed by the hyperthyroid group which was significantly reduced after treatment.

Depression and anxiety are the most common psychiatric presentation in thyroid disorders. Both subclinical and overt thyroid disorder have been associated with mood disorders and it has been stated that abnormal thyroid functioning can affect mood and influence the course of affective disorders\textsuperscript{20}. The causal relationship for this association remains unclear. Several theories were proposed. The association can be because of specific conditions in the hypothalamic-pituitary-adrenal (HPA) axis regulation or can also be part of coping with a chronic medical condition as discussed earlier.

a) Marangell et al\textsuperscript{21} hypothesized a relation between thyroid hormone status and neurotransmitter activity by postulating that thyrotrophin releasing hormone (TRH) itself is a neurotransmitter that has significant antidepressant properties.

b) Jackson\textsuperscript{22} concluded that most patients with depression, although generally viewed as chemically euthyroid, have alterations in their thyroid function including slight elevation of serum thyroxine, blunted thyrotrophin response to TRH stimulation, and loss of nocturnal TSH rise. These changes were generally reversed following alleviation of the depression. It
was also postulated that the increase fT4 and blunted TSH response to exogenous TRH was the result of glucocorticoid activation that increased TRH secretion with down-regulation of the TRH receptor as a consequence.

c) A review by Musselman et al\textsuperscript{23} stated that patients with primary thyroid disease have high rates of depression caused by alterations of the HPA and that the alteration consists of changes in the TSH response to TRH and elevated TRH concentrations in the cerebrospinal fluid.

d) Cleare et al\textsuperscript{24} found that depressed patients had higher levels of TSH, and suggested that hypothyroidism reduces central 5-hydroxytryptamine (5-HT) activity in the brain.

Most of the studies suggest an association between thyroid disorders and depression but there are studies which opposed these theories. Ordas et al\textsuperscript{25} stated that thyroid disease per se rarely was an etiological factor of major depression while Fava et al\textsuperscript{26} found that hypo and hyperthyroidism were extremely uncommon in depressed patients, and that the presence of subtle thyroid abnormalities did not have impact on treatment outcome.

As compared to depression, the association between anxiety and thyroid disorder has been less systematically researched. Several studies indicate an association between panic disorder and thyroid dysfunction\textsuperscript{27-29} Roger et al\textsuperscript{27} found that patients with panic disorder had more medical problems including thyroid dysfunction than the population at large and patients with other anxiety disorders. Study by Hoffman\textsuperscript{30} concludes that agoraphobia unlike depression or panic disorder seems to be less biologically determined in respect to the HPA axis while a study by Patten et al\textsuperscript{31} found social phobia to be the only anxiety disorder associated with thyroid disorder when adjustment to age, sex and other chronic condition was carried out.

Another study however, found higher rates of panic disorder, simple phobia and obsessive-compulsive disorder in thyroid patients than in the general population which suggest that the occurrence of psychiatric and thyroid diseases may be the result of common biochemical abnormalities\textsuperscript{32}. The same study found that the most frequently encountered anxiety disorder was panic disorder, followed by generalized anxiety disorder, social phobia and obsessive-compulsive disorder.

The lifetime prevalence of depression and anxiety is 11.8\% to 36.8\% and 5.0\% to 41.2\% respectively in the group with previously known thyroid disorder\textsuperscript{20, 31-32}. In hypothyroid patients (overt and sub clinical), the prevalence is 20.0\% to 33.0\% and 33.0\% to 43.0\% for anxiety disorder and depressive disorder respectively. The prevalence is also as high as 53.0\% to 69.0\% for anxiety and 30.0\% to 70.0\% for depressive symptoms in hyperthyroidism\textsuperscript{33}. When looking at the subtypes of anxiety, it was found that the prevalence of panic disorder ranged from 5.0\%-45.6\%, social phobia from 7.4\%-8.7\%, OCD 7.4\% and GAD 41.2\%\textsuperscript{31-32}.
Autoimmune Thyroid Disorder and Depression and Anxiety

Autoimmune Thyroid Disease or Disorder (AITD) is a term that includes the various clinical forms of autoimmune thyroiditis, such as the classical Hashimoto’s thyroiditis, Grave’s disease and primary myxedema. An almost invariable feature of AITD is the production of antibodies to at least one of the main thyroid specific autoantigen i.e. thyroglobulin (Tg), the main protein of the colloid; thyroperoxidase (TPO), the enzyme that catalyzes iodine organification, and the receptor for the thyrotropin (TSH-R).\(^{34}\)

AITD is an autoimmune process characterized by the lymphocytic infiltration of the thyroid gland and by the presence of autoantibodies against the thyroid antigens.\(^{35}\) Results of FNAC as well as results of autopsy show that up to 40% of women have AITD evident by lymphocytic infiltration of the thyroid gland.\(^{36}\) Assessment of thyroid antibodies in peripheral circulation shows that the prevalence of AITD is 13.9% to 17.0% in the female population.\(^{6, 35-37}\)

In clinical practice, a diagnosis of AITD is usually based on the presence of thyroid antibodies in serum. However, this approach could miss some patients with AITD because not all AITD patients are positive for thyroid antibodies in peripheral circulation, including those with thyroid dysfunction.\(^{46}\)

An association between mood disorder and thyroid immunity had been demonstrated in community samples, psychiatric patients as well as primary care patients.\(^{36-40}\) Fountoulakis et al\(^{40}\) found a link between autoimmune thyroid disease and unipolar depression where in the study, compared to control patients, all depressive subtypes had significantly higher thyroid binding inhibitory immunoglobulin and higher thyroid microsomal antibodies. A community study by Pop et al\(^{41}\) concluded that women with elevated TPO-Ab levels are especially vulnerable to depression.

As for the anxiety disorder, the association also been shown by several studies.\(^{37, 42}\) A recent study found that a general population of women with AITD, diagnosed by hypoechoic thyroid pattern and by presence of thyroid antibodies in serum, showed higher scores of anxiety independently from their thyroid function.\(^{36}\) Furthermore, several studies provide evidence that autoimmune thyroid process per se may be related to mood and anxiety disorders\(^{36-37, 42}\) and the presence of autoantibodies itself may produce abnormal behavior even in euthyroid states\(^{43-45}\).

The possible explanations are described as follow:

1. The effects of psychological stress on the dysregulation of the immune system.

Since several neuroendocrine secretory systems are involved in the control of immune reaction, a common neuroendocrine dysregulation involving cytokines might concur towards the pathogenesis of both affective disorders and autoimmune disease. Recent evidence suggests that thyroid autoimmunity may be affected by HPA axis through the balance of proinflammatory and anti-inflammatory cytokines.\(^{46}\)
The effects of the autoimmune disease to the central nervous system. Involvement of thyroid immunity in brain functioning was reported by several neuroimaging studies, demonstrating a higher prevalence of brain perfusion abnormalities in euthyroid patients with autoimmune thyroiditis and higher levels of anxiety and depression in these patients. The brain perfusion abnormalities are similar to those observed in Hashimoto’s encephalopathy and may suggest a higher than expected involvement of the brain in AITD.

Conclusion

Depression and anxiety are the most common psychiatric presentation in thyroid disorders. However the causal relationship for this association remains unclear.

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CASE REPORT

CONVERSION SYMPTOMS IN SCHIZOPHRENIA: A CASE REPORT

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Abstract

We report a 35 year-old Iranian female who presented with a sudden onset of left sided hemiparesis associated with temporary loss of consciousness of about 3 minutes. Neurological examination revealed a power of 0/5 over the left upper/lower limbs but reflexes were normal and plantar reflex was downgoing and equivocal. A computed tomography scan was done and it revealed mild bilateral frontal atrophy and a temporal arachnoid cyst which was decidedly an incidental finding and it did not have any relation to the clinical presentation. Electroencephalogram and other laboratory findings were all normal. When the psychiatric team interviewed her, it was revealed that the patient had recently experienced a major stressful event just prior to the hemiparesis. On further interview, the patient had complained of delusions of persecution, delusions of reference and also auditory hallucinations for approximately a year prior to admission. There have been only a spatter of reports of conversion symptoms seen in patients with schizophrenia and this is such a case.

Keywords: Schizophrenia, conversion disorder

Case Report

A 35-year-old Iranian female was brought to the emergency department with a sudden onset of left sided hemiparesis associated with temporary loss of consciousness of about 3 minutes. The patient also complained of decrease in sensation and paraesthesia over the left upper limb (UL) and lower limb (LL). A neurological examination revealed 0/5 power in the left UL/LL. Reflexes were normal and plantar reflex was downgoing and equivocal. The first clinical impression was that the patient was a young stroke patient. A computed tomography scan was done and it revealed mild bilateral frontal atrophy and a temporal arachnoid cyst. The neurology team decided that the radiological findings were incidental and it did not have any relation to the clinical presentation. Electroencephalogram and other laboratory findings were all normal. The patient was referred to the consultation-liaison psychiatry team for an opinion as the neurology team felt that her symptoms were not consistent. When the psychiatric team interviewed her, it was revealed that the patient had recently experienced a major
stresful event just prior to the hemiparesis. She was in a relationship and recently, her boyfriend of 7 months had asked to break up with her.

On further interview, the patient had complained of delusions of persecution, delusions of reference and also auditory hallucinations for approximately a year prior to admission. The patient had been in Malaysia for 7 months to further her study. However, her symptoms of persecutory delusions had been there since she was in Iran. She had been telling her family members that people were following her and she appeared fearful. She was diagnosed to have Schizophrenia.

When she finally managed to arrange and persuade to meet her boyfriend, the patient’s hemiparesis resolved immediately and was discharged the next day with no clinical sequelae. However, the auditory hallucinations and the persecutory delusions persisted. The patient was treated with Quetiapine 100mg daily increased daily to 400mg per day after 4 days. The psychotic symptoms improved after starting the patient on treatment. The patient subsequently went back to Tehran and she was advised to continue treatment there.

Discussion

Approximately 2,500 years ago, sage Greek philosophers and physicians of the great ancient Greek civilization came across a curious illness. They named it ‘hysteria’, which is derived from the belief that unexplainable losses of motor and special sensory function in women were caused by the wanderings of unanchored uteri to distant body parts, where they interfered with normal physiology¹. Hysteria eventually became recognized and coined as ‘conversion disorder’, which has its origin in the underpinnings of Freud’s assumption that patients converted their psychological symptoms into physical or somatic ones. The interest in conversion disorder peaked at the turn of the 20th century, after which a steady decline of interest was observed, up to a point where the disease itself was thought to have waned². However, over the past 10 years there has been a resurgence in research into conversion disorder. Conversion disorder has been established that it remains common, and disabling³.

Interestingly, conversion disorder is a psychiatric diagnosis which rarely presents to psychiatrists first. Neurologists are invariably the first line of physicians to see these patients as the presenting complaint is typically a neurological symptom. The full diagnosis, however, requires an ‘associated psychological factor’⁴ which is where the expertise of the psychiatrists is sought. As conversion disorder has frequently been associated with a co-morbid psychiatric or neurological diagnosis, care should be taken to explore other co-morbidities. Most literature finds that conversion disorder is associated with an anxiety disorder or phobia as well as mood disorders, and occasionally schizophrenia⁵. This report highlights the complexity of diagnosis and the uncommon occurrence of a clinical presentation where conversion symptoms are seen in the background of schizophrenia.

The full diagnosis of conversion disorder usually requires both a psychiatrist and a neurologist, and therefore needs good collaboration between them in the multiple-step process: careful history taking and physical examination by the neurologist, referral to the psychiatrist, and finally, optimally, a clear joint explanation to the
patient\textsuperscript{6}. The diagnosis of conversion disorder relies on clues and signs such as inconsistency of symptoms, give-way weakness, ‘la belle indifférence’ and the Hoover’s sign. However, these signs may not reliably exclude neurological disease\textsuperscript{7}.

A question that lingers amongst the therapists is how are the symptoms and signs produced, if they are not feigned? Electrophysiological, single-photon emission computed tomography and positron emission tomography studies suggested a central corticofugal inhibition of afferent stimuli as responsible for hysterical sensory loss, since evoked potentials showed abnormalities that disappeared when tested again after resolution of the symptoms\textsuperscript{8-10}. In 2001, Vuilleumier and colleagues\textsuperscript{11} shed further light on central inhibitor mechanisms, involving not only cortical areas but also corticosubcortical circuits. These findings explain the possible biological etiology of conversion disorders.

Conversion disorders have been frequently associated with other mental illnesses, mostly depression and anxiety disorders. Sar et al\textsuperscript{12} reported 50% anxiety, 42% phobia, 71% affective disorder and 34% depression among patients with conversion disorder. Slater and Glithero\textsuperscript{13} studied 85 patients with hysteria and followed up with them for 9 years. 39% of the patients had no significant organic disease while others received diagnoses such as schizophrenia and depression.

Conversion symptoms has been reported in patients with schizophrenia although infrequently. Some authors have described it as a possible prodromal presentation of schizophrenia\textsuperscript{5}. Cernovsky studied 112 patients with schizophrenia and hysterical symptoms were recorded in 37.5% of the patients\textsuperscript{14}. Noble\textsuperscript{15} also observed 6 of his patients who presented with a mixture of hysterical and schizophrenic symptoms. Joubert reported that anxiety and hysterical symptoms have been described in schizophrenic populations and wondered if such symptoms represent discrete clinical entities or are intrinsic to the schizophrenic process\textsuperscript{16}.

In fact, hysteria seems to have a rather closely interrelated past with schizophrenia. Historically, ‘hysterical psychosis’ was used to describe a vast amount of posttraumatic psychopathology. In the 19th century, it was especially well-studied, particularly in French psychiatry. In the early 20th century the diagnosis of hysteria and hysterical psychosis fell into disuse. Patients formerly diagnosed as hysterical psychosis were later diagnosed as schizophrenics or malingerers\textsuperscript{17}. If hallucinations occur in conversion disorder, it differs from those of psychotic disorders in the way that they generally occur with intact insight, involvement of more than one sensory modality, psychologically meaningful and described as an interesting story\textsuperscript{4}.

In conclusion, conversion symptoms in patients with schizophrenia are not common but comorbidity has been documented. After all, psychiatry is a discipline where comorbidities are the general rule rather than exception. Therefore it is essential to tease out the comorbidities so as to best manage the patient and possible achieve the best outcome.

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EDUCATION PAPER

KNOWLEDGE ON WRITING A GOOD SCIENTIFIC PAPER

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Introduction

Research publication is an essential part of scientific research process. Writing is a means of communication of scientific work, a means to disseminate the research findings to the public and also to their peers. A scientific paper is a written and published report describing original research results. Getting a paper published in a well-respected peer-reviewed journal is an important goal for any researcher. It is an indication of research success.

There are many reasons why people write and this ranged from pure altruism to pleasure to intellectual pursuits to contribute to the scientific knowledge, to improve patient care and to benefit the community and mankind. Reasons to write vary from one individual to another individual. Writing can be difficult and it is seen as a chore, such as, fulfilling a minimum requirement of an organization to get a job, a job confirmation or a promotion, and career development.

One has to understand the basic structure of a scientific paper and it is based on the IMRAD system – Introduction, Methods, Results and Discussion. There are also many different types of writing – Original article, Review paper, Book Review, Case Report, Technical note, Commentary, Letter to Editor, Editorial and other non-scientific materials. Authors must be clear as to what types of paper they are planning to write and construct the manuscript accordingly.

Basic Structure of a Scientific Paper

The International Committee for Medical Journal Editors (www.ICMJE.org) has a uniform requirement for the publication of a biomedical manuscript, and the ICMJE recommended the IMRAD method. IMRAD stands for I (Introduction), M (Methods), R (Results), A (And), D (Discussion). Papers published in the biomedical journals usually follow the IMRAD format.

Title of Paper

Whether your paper catches the attention of the reader depends on the way you write the title of your paper and whether the title interests them. A title should be short and informative. A title may describe the subject of the paper, the focus in a specific field of study, or the outcome of the study or experiment. A title can also be in a form of a question. Readers would want to read your paper if they find your title interesting and informative. Refer to the “Instructions to Authors” for the way they format the title.

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Check the “Instructions for Authors” as to the format of writing one’s name, affiliations and academic qualifications of authors. The format varies from one journal to another.
Decide on authorship at the beginning of the writing. Everyone listed as an author must have played an active and significant role in undertaking the research and preparing the paper. All authors must approve the final manuscript. In some journals, the role of each author is required. The ICMJE has provided criteria for the fulfilment of authorship, so has some other journals, such as the New England Journal of Medicine.

The best time to decide the authors for your paper, including the order, and to assign authors’ roles in preparing the paper is at the beginning of a project. The list should include which author is responsible for which section of the paper. Any change in authorship, e.g. adding of new authors or deleting existing authors, after submission must be approved in writing by all authors.

Abstract

An abstract summarises the whole manuscript and highlight major findings in the study. An abstract can be structured and unstructured, depending on the Journal requirement. Always check with the “Instructions for Authors” for the required format. A structured abstract is now a common practice, and this consists of the following headings: Objectives, Methods, Results, Conclusions and Implications of findings. Abstract is written in past tense.

Important result should be included in the abstract, including at least one statistic and preferably confidence intervals or P values. Do not include any information in the abstract that is not found in the main text of your paper. Check that all of the results that you include are accurately quoted from the results section of your paper. Write the abstract after you have finished writing the main text of your article. As an abstract is more often read than the full text, thus writing an effective abstract will get you cited.

Keywords

Keywords are normally given at the end of the abstract and the number of keywords depends on the targeted journal that you are submitted your manuscript to, and this can ranged from 3 to 10. Check the keywords that have been used in similar articles in your targeted journal or in a Medline search. It is also useful to check the keywords used in similar articles, such as in articles you have used in your references. These keywords will become the key search words in the databases. Terms from the MeSH (medical subject heading) listed in the Index Medicus should be used. Inappropriate choice of keywords will not get your paper traced and thus not cited.

Introduction

Set the scene for your paper and introduce the topic and state why your topic is important. State the research problem and the scope of the paper. Identify the gaps in the topic and give rationale as to why you are studying this topic. Do a critical review of the literature on your topic and refer to pertinent studies only.

Conclude this section with the objectives or research questions you will address in this paper. The objectives must be specific and it is best to have only one objective and no more than two objectives for a paper of average length. Make sure that these objectives are then addressed in the methods, results and discussion sections of the paper. If you are using any abbreviations, then list them in the introduction.
Methods

Describe the methods or experiment you are doing in this study to obtain the results, and explain why this method or experiment was chosen. Describe the type of study design (e.g. randomised controlled trial, cohort study, quasi study, systematic review, etc.) used in the study and how quality control was maintained in the collection of data.

State the type of sampling technique used in your study, whether it is a random, cluster, systematic or convenience sampling or others. Need to explain how the sample size was determined and what software program was used for the sample size calculation, e.g. StatCalc, Epi Info, Stata, PS, etc., and the sample size should be large enough to provide a precise estimate of the effect. State how the participants or patients were selected for the study and how representative were these samples. What were the inclusion and exclusion criteria for the selection of samples. If intervention is carried out in an experimental study, describe how the randomization of group allocation was carried out.

If questionnaires are used in the study, they will have to be listed, and if these questionnaires are adopted from overseas, you will need to explain how they were adapted and validated in the local culture. If you are developing your own questionnaire, how was it developed and validated? Some questionnaires, inventories and other measurement scales are copyright. If you are using a copyright questionnaire, you need to include reference to the fact that you have permission for its use. State as well how the questionnaire was administered in the study (e.g. telephone interview, self-administered, interviewer administered, etc.).

Describe what statistical analyses were used and what statistical computer packages (e.g. SPSS, STATCALC, STATA, EPIINFO, etc.) was utilized for the analyses. Give a P value or confidence interval to determine the statistical significance.

Was ethics approval obtained for the study, and if so, state the name of the Ethics committee (e.g., The University of Malaya Medical Ethics Committee). If none, then state that the research conforms to the Helsinki Declaration of Human Rights. Also, was informed consent obtained from the participants. If any photographs were used, informed consent needs to be obtained from the participants or patients or their parents or guardian. Most journals would decline a publication of a manuscript is there is no prior ethical approval for the study.

The methods section must be clearly written for the study to be reproduced.

Results

The results section is the main bulk of the paper. Make sure results are given for all research questions or objectives listed in the Introduction. Report the most interesting and important findings, but need not cover every findings. In reporting your results, use past tense.

The first paragraph would normally describe the characteristics of the sample. Response rates are also given here. Provide demographic details of respondents and non-respondents, and a comparison between them, provided you have data on non-respondents. Basic demographic characteristics of the sample should be given, and this is usually presented as the first table. Plan your tables and figures in a sequential order so that the story is told in an orderly manner. Make sure there is a
heading for each of the table or figure used. Decide whether it is best to use graph or tables or just text.

Then, present the descriptive results, followed by univariate and then multivariate statistics. A basic table describing the characteristics of the sample can be combined with univariate statistics, e.g. mean, standard deviations, range, etc. In order for your paper to stand a chance of getting accepted, include multivariate analysis of the results, and remember to include confidence intervals and p-values. Try using percentages rather than exact data or frequency.

Decide how best to present your data, either in graphs, figures or tables. It is best to have a few illustrations to make your paper interesting. However, there are limitations to how many illustrations you can put in and you need to check the Journal requirement on this. Do not repeat in textual form the same information that is in the tables. Refer to the table in your text and highlight or summarize the main points shown in the table. If you have quoted anyone else’s data or your own from previous publications, include a reference at the bottom of the table. In some journal, you put all the illustrations separately after your References, whereas in other journals, illustrations are given approximately within the text. Summarise what you have found in the last few sentences of the Results section. Get a statistician to check through your analyses and illustrations before you submit your paper.

**Discussion**

This is the most difficult section to write. Discuss the findings written in the Results section, for e.g. the patterns, the relationships or associations of variables found, the generalization, and the implications of the findings. Even though there were no relationships found or no statistically significance, you will need to discuss why this is so.

Basically, you need to discuss what significant findings you have found. Each of your objectives and research questions need to be discussed. Are your results different from past studies, if so, state why and in what ways – sample selection or size, different method of measurement? How does your study add to the existing knowledge? Can the study be generalised to other findings in the literature, to the theory or to the practice? How does your study add to or change practices or management? Your suggestion on future research is needed. Make a strong case as to why your findings are satisfactory and others are not. Try to convince the reader about your findings by evaluating both sides of your arguments.

The limitations and weaknesses of the study also need to be included in the discussion, e.g. sample selection or inadequate sample size, and how these may affect the validity of your findings. End your discussion by summarizing the implications of your findings and the significance of your work.

**Conclusion**

Most important findings should be highlighted here, and how will these affect clinical practices. Recommend more research into this area and state the future direction for research in this area.

**Acknowledgements**

You certainly do not want to offend anyone who has helped you in your research work. Acknowledge those who do not justify being an author but have contributed to the paper—your research sponsors (in some journal,
they required the research grant number), laboratory assistants or technicians, participants or patients, hospitals or clinics, ethics committee and copyright holders. If you have any conflicts of interest, this needs to be reported here.

References

Strictly adhere to the “Instructions for Authors” on the style of referencing, whether its Harvard style, Vancouver style, APA (American Psychological Association) style or others. They all have specific style of referencing for the various types of papers, e.g. original paper, chapter in a book, a book, letter to editor, papers or information downloaded from a website, etc. Know what style of referencing of the Journal that you are submitting your paper to. A paper can be rejected if it does not follow the required style. For all information, materials or intellectual property gathered from other sources, make sure you referenced in your paper, if not you can be caught for plagiarism.

Always quote only significant and published references in the field of research that you are working on, and make sure that your references are up to date. Try to quote a couple of papers published in the particular journal that you are submitting your paper to and also cite your own papers or your colleagues’ to increase your own citation rate. Check your references properly before you submit and also during the gallery proof reading stage once your paper has been accepted for publication. Try using Reference Softwares, such as, the EndNote, Reference Manager, Proquest or others to help you manage the references. These softwares are very useful in organising and managing your references and changing to the various referencing styles.

Conclusion

Before you start writing, organize and consolidate all your ideas and put them in the appropriate sections in your draft paper. You need to keep writing and revising your paper until you get it right and satisfied. Let your colleagues or an experienced author read your paper and gets their comments. Revise your paper based on their comments before submitting. Also, do a final check on style of writing, spelling and grammar. Write clearly and concise. Decide which journal you are sending your paper to and read their “Instructions to Authors”. Make sure your paper is within the scope of the Journal. You must have protected time for effective writing and the key to writing a good scientific paper is to write, write and write.

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Note: Professor Low Wah Yun is the Editor-in-Chief of the Asia-Pacific Journal of Public Health www.apjph.sagepub.com

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BRIEF COMMUNICATION

THE CURRENT SITUATION OF THE PEOPLE WITH MENTAL ILLNESS IN THE TRADITIONAL HEALER CENTERS IN SUDAN

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Sudan - Country profiles

The Sudan occupies area of land in East Africa, almost one million square miles, or 2.5 million squares km². It shares boundaries with nine countries: two of which are Arab, Egypt, Libya, Kenya, Uganda, The Congo, Chad, The Republic of Central Africa, Ethiopia and Eritrea. The country is situated in a strategic important geographical location that links the Arab world to Sub Saharan Africa, where the Sudanese population and those of the neighboring countries move freely across most of these borders. Sudan geography, climate, and multi-ethnic and cultural backgrounds remain the major health determinant.

Sudan is the largest country in Africa. The heart of the country, in terms of population, lies at the confluence of the Blue and White Niles. The complex of the "three towns," comprising the three largest cities, Khartoum, Khartoum North and Omdurman, is situated there and contains almost 20% of the population. The total population of Sudan was about 39.39 million (projected from 2009 census). the urban population was estimated at 33%. About 2.2 million are still entirely nomadic. Sudan's peoples are as diverse as its geography. There are about 19 major ethnic groups and a further 597 subgroups. Sudan is rich in terms of natural and human resources, but economic and social development have been below the expectation.

Psychiatry in Sudan began in the 1950s under the guidance of the late Professor Tigani El Mahi, the father of African psychiatry. He pioneered, among other things, rural services and the open-door policy. His successor, Dr Taha A. Baasher, shouldered the responsibility further and extended the services to the periphery. He established the Mental Health Association of Sudan and the Sudanese Association of Psychiatrists. By 1950, the Clinic for Nervous Disorders, Khartoum North, was well established. The Kober Institution was built later to cater for 120 forensic psychiatric patients. In 1971 EL Tigani EL Mahi Hospital was established as the national mental hospital (El Faki 1997).

Traditional healing in Sudan:

In Sudan traditional healing is the most prevalent method for the treatment of mentally sick people mostly due to lack of economic resources, inaccessibility of medical services, and lack of awareness among the population and the high prices of psychiatric services (Elsafi 1994). Generally, traditional healing in Sudan can be divided into two distinct groups:
Religious healers influenced by Islamic and Arab culture, such as traditional Koranic healers and Sufi healers. Nonreligious healers influenced by African culture, such as practitioners’ zar, talasim, and kogour. The Religious healers is subdivided into two groups, the first group uses only Koranic treatment, derived from certain verses. This involves reading and listening to the Koran with the active participation of the patient (Bali W, 1992). The success of treatment depends on the reliability of the healer and the degree of his belief, in addition to the conviction of the patient and his belief in the Koran as a source of treatment. Bassher (1984) mentioned that the holistic approach of traditional healing might lead to long-term stability of health; this might explain why in many cases patients would prefer this approach than other techniques that result in short-term relief of symptoms. Therefor, there is a great demand to study those mentally ill patients within the traditional healer system to understand the reasons and factors that brings this long term stability in health. Karel Peltzer, who has more than 100 publications about traditional healers in Africa, studied the traditional healing methods in many African societies including Malawi, Ghana, Zambia, Nigeria, and South Africa. In one of his papers studied the bio-psycho-social therapeutic models in a traditional African setting (in Malawi), he studied the therapeutic setting for schizophrenia in 3 traditional healer centers in term of organization, environment, culture, family and follow up and he compare it to the current western model of psychiatric practices and he concluded that the traditional healers centers setting are in a number of ways superior to the western model. 5

Traditional Healer Centers in Sudan

In Sudan there are many traditional healer centers that belongs to a common way or concepts that these centers were based on, Baasher (1975) stated that, traditional healers are known by several names, the Faki, The Fageer, The Waly, The Shareif, The Sayed and The Sheikh. The followers of each traditional healer are called the Murideen. The degree of successful influence of the sheikh depend on religious morals and knowledge, piety (wara), asceticism (Zuhd), working miracles (Karamat) and spiritual power (Fadol 1995, Riordan 1999). During our 5 days trip visit to Sudan we visited most of the famous traditional healer centers in Khartoum and Gezira State. These big centers accommodate around 1000 to 3000 thousand students who are staying permanently in the centers without paying any special fees, for at least 3 to 5 years, where they learn reading of Quran (Tajweid), recitation (tilawa) and Quran writing and other religious and spiritual teachings. These big traditional healer centers are also famous of providing a lot of social, consultation and spiritual services to the local communities as well as for the visitors who come to these centers from different parts of the country. There is no clear way for financing these centers apart from the donations and contribution (Zowara) from the followers of each of these centers (The Murideen) and the regular visitors. The contribution is not only money but also food items and other materials especially during the yearly celebration of the death of the grandfather sheikh, the founder of that center, this kind of celebration is called (Holliya) where special food is served (Fatta) and Zikir is practiced in groups for the whole night until morning. Many people come from different parts of the country to attend this ceremony, even sometimes foreigners come. Usually people go to those healers for consultation in each and every aspect of their life. I M. Ahmed, J.J. Bremer, M.M.E. Magzoub 1999
stated that Traditional Healers can also act as family counselors in critical life events such as building a house, marriage, naming a newborn, and may have both judicial and religious functions. They often act as an agent between the physical and spiritual worlds. People usually go to traditional healers to bless them in their work and give them what is called Fatiha (special prayers performed by the sheikh) to bless them in all activities in their life. The poor also contribute with small amount of share or they may take their sheep's and animals or their agricultural production as a contribution to these centers. Sometimes they may sell their sheep's and donate the money to these centers as Zowara as well. It is not a must but they feel ashamed if they come empty handed to the sheikh whether he is a life or dead. It was a belief that the amount of blessing come to you from the visit to the sheikh depend on the amount of scarifies and Qurban that they spend. Sometimes they may go and visit the dead body and they move around the grave that kept under the high tall building that called (QUBA). They collect the holy sand of the dead sheikh and they call that Sand (BARAKA).

It has been stated by Deifalla (1975) that, miraculous cures are attributed to the divine powers of the dead sheikh. This why they spread the sand all over the body or they may drink it after they dissolved it in water; some times they hang it in the body or they put it in special place in the house to bless the house. People believe that disobeying the sheikh brings damnation on the followers and their families. They believe in the sheikh's blessings and regard him as a mediator between the follower as a slave and the Lord. They also believe that the sheikh, whether dead or alive, is capable of rescuing them and pleading on their behalf for help and release from illness. Thus the sheikhs, in the people's eyes, are true representatives of spiritual power (Fadol Y. Tabagat Wad Daifalla 1975). Regarding the mentally ill patients usually they are brought by their relatives and families, depending on the condition of the patient, if he is severely disturbed and agitated they put him in an isolated dark room especially build for treating the mentally ill patients, and they chain them to the wall, they were not allowed to move or walk in that room and there is no toilet facility. They are prohibited to come out of that room until at least 40 days. Some times patients succeed in putting off that chain and they run away and escape from the center. Usually these rooms are in the far corners of these traditional healer centers. The patients will be deprived from all types of food except only special porridge made in the center. The duration that the patient stays in the center varies from 40 days to 6 months or more, depending on his symptoms and condition, usually his psychiatric medication, if any, will be stopped by the traditional healer so as not to interfere with their traditional healing methods.

The patients do not come from the local community around the centers, but they will be brought from different parts of Sudan. Usually the patient will be accompanied by his family members and relatives. The late Professor Tigani EL Mahi, the father of African Psychiatry, since 1960th stressed that the attitudes towards religious healers should aim to encourage good quality of practice while trying to end harmful or faulty methods (Elsafi &Baasher, 1981). However, since then only few attention was been paid to the mentally ill patients in the traditional healer centers, in term of assessing their conditions. There are no governments’ officials or any other organization had reviewed the system of diagnosis and management in these traditional healer centers. Only little efforts
was been done so far and until now to improve the miserable living conditions of the people with mental illness in these traditional healer centers, although there is huge revolution in modern psychiatric treatment and mental health services around. On the other hand, in term of researches, Most of the previous studies conducted in the area of traditional healing in Sudan have concentrated on studying the characteristics of the visitors to the traditional healers in general. Ahmed, Bremer, Magzoub and Nuri in 1999 had investigated the characteristics of visitors to the traditional healers in Sudan in a sample of 134 visitors from 4 traditional healer centers, and they found that 60% of the visitors came for treatment, 26% came for blessing and 4% came for consultation or education, and about 45% of visitors thought that traditional healers are problem solvers. 60% of the visitors are in the age group between 21 to 40 years, and 62% of the visitors are female. 61% of the visitors have rural areas and 47% are illiterate. No previous studies in Sudan have concentrated on studying the people with mental illness within the traditional healer system.

Now University of Malaya, the leading research institute in Malaysia, is conducting a research in this area of mental health in Sudan, trying to explore more in this area of mental health and traditional healing and we will give more details when the results of the research comes out.

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