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## Information for Authors

Email manuscript submissions to the Editor, The ASEAN Journal of Psychiatry at the following address:

Hatta Sidi MBBS MMed DipSHC.  
Chief Editor, ASEAN Journal of Psychiatry (2009-2010)  
Professor of Psychiatry, Department of Psychiatry,  
Universiti Kebangsaan Malaysia Medical Center (UKMC)  
56000 Cheras, Kuala Lumpur, Malaysia.  
([www.aseanjournalofpsychiatry.org](http://www.aseanjournalofpsychiatry.org))

Email: [chiefeditor@aseanjournalofpsychiatry.org](mailto:chiefeditor@aseanjournalofpsychiatry.org)

**EDITORIAL**

**SHOULD MEDICAL STUDENTS WITH MENTAL ILLNESS  
BE ALLOWED TO BECOME DOCTORS?**

*Marhani Midin\* & Hatta Sidi\**

**\*Department of Psychiatry, Faculty of Medicine, Universiti Kebangsaan Malaysia,  
56000 Kuala Lumpur, Malaysia.**

Over the recent years, too many complaints have been heard from employers, at least, in the scenario of Malaysian hospitals, that more and more housemen are becoming “problematic” and not being able to function adequately. Too many a time, mental health problem or illness is being blamed as the culprit, leaving a negative impression on mental health and psychiatric profession. This is a disconcerting issue, which needs to be addressed. Is this a result of a sin committed by medical universities for producing unfit doctors? Is this due to unconducive working environment that may trigger mental health problems among the young doctors? Or are there other reasons contributing to this phenomenon? These questions remain difficult to be answered as, to our knowledge, there has not been any systematic enquiry looking into this issue.

The whole issue needs to be tackled systematically from different angles. There is a need to profile these “problematic” doctors in terms of the underlying reasons contributing to their inability to function. Is it true that they suffer from mental illness? If so, are they receiving adequate treatment before they are judged as not being able to function? Secondly, there is a need to backdate their conditions as to when these problems may have started, whether they have already surfaced during their medical course or even before.

As psychiatrists working in a medical university whose job involve providing treatment and care for medical students who have mental health problem or illness during their medical course, we feel responsible if our decisions in

supporting them to pursue their course may jeopardize the standard of care provided by them after they graduate. Important to note here, this is not a straightforward or easy decision to make. Firstly, mental illnesses in this era of advanced psychopharmacology and other treatment interventions are generally treatable whereby a person can achieve a state of remission adequate for effective functioning. Theoretically, if the affected persons continue to adhere to their treatment, they have the chances of functioning reasonably well. Secondly, predicting which students would fare later in their working life better than the others it is not straightforward task. Even, milder conditions, which are seemingly easier to treat may not guarantee a good functioning later among the affected persons as we know factors contributing to the progression of mental illness are multiple. Thirdly, this is also about individuals’ right to pursue their dreams in life, which may involve becoming doctors. Everybody should be given equal chance to live life to the fullest capacity. Making them leave the course is like robbing their chances to achieve their purpose in life and may worsen the situation for the affected persons and their families.

However, it is indeed important to ensure, as much as possible, that only students who are fit to practice to be allowed to become doctors. Doctors have responsibilities different from other professionals in the nature of their day-to-day job, which almost always involves decision making on patients’ health and safety. Therefore, it is a basic requirement for them to have a sound judgment at all time while working; a situation, which may be impaired by

mental illness. Counseling students with mental illnesses, which are relatively more challenging to treat in the long term to leave medical course is a logical solution to be practiced by medical universities.

So far, this issue has been dealt with by the different universities on individual basis. To the best of our knowledge, there is no standard guideline for medical universities in making decisions related to this issue.

In conclusion, the issue of fitness to practice among young doctors who seem to be having problems to function well needs to be studied systematically and a guideline on fitness to practice needs to be formulated to be followed by medical universities which has mushroomed

in number over the recent years. There are useful guidelines [1, 2], which can be used as a reference for this purpose.

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**Corresponding author: Assoc. Prof. Dr. Marhani Midin, Department of Psychiatry, Faculty of Medicine, Universiti Kebangsaan Malaysia, 56000 Kuala Lumpur, Malaysia.**

**Email:** marhani@ppukm.ukm.my

ORIGINAL ARTICLE

## HEALTH-RELATED QUALITY OF LIFE PROFILE IN RELATION TO CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING AMONG BREAST CANCER PATIENTS

*Pei Lin Lua\*, Noor Salihah Zakaria\*, Nik Mazlan Mamat\*\**

**\*Centre for Clinical and Quality of Life Studies (CCQoLS), Faculty of Medicine and Health Sciences, Universiti Sultan Zainal Abidin (UniSZA), Kampus Kota, Jalan Sultan Mahmud, 20400 Kuala Terengganu, Terengganu, Malaysia;**

**\*\*Kulliyyah of Allied Health Sciences, International Islamic University Malaysia (IIUM), Kuantan Campus, 25710 Kuantan, Pahang, Malaysia.**

### Abstract

**Objective:** Despite the availability of modern anti-emetics, chemotherapy-induced nausea and vomiting (CINV) symptoms remain distressing to a high number of cancer patients. This study intended to (1) describe the incidence of CINV and anti-emetic usage; (2) assess the health-related quality of life (HRQoL) and correlate its components with *Global Health Status*; (3) evaluate HRQoL status in relation to CINV among breast cancer patients receiving chemotherapy. **Methods:** A cross sectional study was conducted in two government hospitals located in the East Coast of Peninsular Malaysia (Terengganu, Kelantan). The Morrow Assessment of Nausea and Emesis Follow-up (MANE-FU) and European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-C30) were administered. Descriptive statistics and non-parametric tests were employed (SPSS 16). **Results:** Respondents included 41 female patients (age =  $49 \pm 9.6$  years; Malay = 92.7%; no family history of breast cancer = 68.3% and on moderately emetogenic chemotherapy = 97.6%). Majority of patients experienced nausea during or after chemotherapy (90.2%) and rated it as 'severe'. Most patients had taken anti-emetic (87.8%) and considered it 'somewhat useful'. The median score for *Global Health Status* was 50 (IqR= 16.7). *Emotional Functioning, Fatigue and Pain* correlated fairly with HRQoL ( $r_s = +0.435; -0.417; -0.387$  respectively). Patients with 'a lot' and 'moderate' nausea displayed significantly more fatigue compared to those with little nausea ( $p=0.029$ ). Those who experienced vomiting reported worse HRQoL profile compared to those who did not ( $p=0.011$ ). **Conclusion:** These findings generally ascertained that CINV remains poorly controlled and significantly interferes with HRQoL, providing rooms for improvements in therapeutic intervention. *ASEAN Journal of Psychiatry, Vol. 13 (1): January – June: 3-12.*

**Keywords:** Health-related Quality Of Life, Chemotherapy-induced Nausea And Vomiting (CINV), Breast Cancer

### Introduction

Cancer is a leading cause of death worldwide, accounting for 7.4 million deaths or

approximately 13% of all deaths worldwide in 2004. This number is projected to continue rising, with an estimated 12 million deaths in 2030 [1]. Low and middle income countries



were most affected as 70% of deaths from cancer have been reported in this region. Expectedly, cancer is currently one of the main health problems afflicting Malaysia. Among the major causes of medically certified deaths in Malaysia, cancer ranked the third. Data from the National Cancer Registry in year 2006 reported that a total of 21,773 cancer cases were diagnosed among Malaysians and breast cancer was the most important cancer among population regardless of sex in Peninsular Malaysia [2].

Essentially, chemotherapy is an important treatment in cancer care but this modality is well-known to be liable to a range of dose-related toxic effects. Among these adverse effects, chemotherapy-induced nausea and vomiting (CINV) have been commonly rated as the most unpleasant and distressing side effects of this particular treatment [3,4]. The symptoms may occur within hours after the initiation of chemotherapy treatment (acute) or their appearance may be delayed until after 24 hours (delayed). A learned or conditioned response known as anticipatory CINV could additionally occur prior to the patients' past experience of poorly controlled CINV. Although current anti-emetic treatments have resulted in much improved control of these symptoms particularly during the acute phase, many cancer patients continue to encounter the adverse effects. In a prospective, multinational study [5], health-related quality of life (HRQoL) status of cancer patients experiencing CINV was shown to be unfavourably impaired despite anti-emetic therapy and this occurred even after treatment with only moderately emetogenic chemotherapy regimens.

The burden that CINV places on cancer patients is substantial and its inadequate control has been specifically shown to affect patients' ability to carry out daily activities, hence reducing the HRQoL status [5]. Evidence from another study indicated that more than 90% of Italian cancer patients with both acute and delayed nausea and vomiting claimed that the symptoms affected their daily life [6]. The same finding also reported that even for those who suffered from

at least mild nausea, 77% of them experienced an impact on their daily activities. An evaluation on 832 chemotherapy oncology patients' HRQoL indicated that patients with both nausea and vomiting showed significantly worse physical, cognitive and social functioning, global quality of life, fatigue, anorexia, insomnia and dyspnea as compared to those who did not experience the symptoms [7]. Patients with only nausea but no vomiting appeared to have less worsening in functioning and symptoms than those having both symptoms.

Although investigations on HRQoL have been widely practiced among the Western population, such studies are only recently made common in our community-based population [8], particularly among cancer chemotherapy patients. As such, this study was conducted among breast cancer patients receiving chemotherapy with the aims to (1) describe the incidence of CINV, the use of and satisfaction with anti-emetic therapy; (2) assess the HRQoL profile and correlate the subscales with global health status; (3) evaluate HRQoL status in relation to the incidence and severity of CINV.

## **Methods**

A cross-sectional preliminary study using convenient sampling was conducted in two government hospitals located in the East Coast of Peninsular Malaysia. At each centre, standard procedures for nausea and emesis prevention and management were conducted in accordance with the chemotherapy protocol and patient's clinical condition. The respondents included women aged 18 years and above, diagnosed with breast cancer, receiving chemotherapy, gave informed consent, could communicate in the Malay Language (Bahasa Melayu) and understood the study procedure. Excluded from this study were those with other malignancies or patients who were undergoing concurrent radiotherapy. The exclusion criteria also included any type of illness of such severity that prevented patient's full cooperation in the study. Permission to conduct this study was obtained from the Ministry of Health (MOH) Research and Ethics Committee (MREC).

Data collection period commenced from March to August 2011.

Two government-run oncology clinics were the selected recruitment sites. Following MREC approval, potential participants were identified by research assistants (RAs) for the study enrolment. Each woman who has been scheduled to receive their subsequent chemotherapy treatment was invited to participate. After providing written consent, patients attained instructions to complete the research tools. The questionnaires were distributed during their ordinary chemotherapy treatment session in which the completion was conducted under the supervision of RAs, and the forms were later collected all at once.

Patients' medical reports were extracted and reviewed to obtain their demographic and medical information including biochemical data, chemotherapy treatment and breast cancer related characteristics. Monthly household income is an exception whereby this information was self-reported by the patients.

CINV were assessed using questions adapted from Morrow Assessment of Nausea and Emesis Follow-up (MANE-FU) [9]. This instrument was an extension from MANE which includes extra questions on symptom occurrence and anti-emetic usage. The MANE scale is a retrospective tool, provided with separate questions in the areas of anticipatory nausea, anticipatory vomiting, post-treatment nausea and post-treatment vomiting. This questionnaire was translated into Malay language for adaptation in this community-based sample. There are a total of 16 items with 2 major domains; nausea and vomiting. In addition, all items were further categorised into five subscales; occurrence- (4 items with *yes/no* response), frequency- (2 items with 7-point Likert scale), duration in hours – (4 items with open-ended response), severity- (4 items with 6-point Likert scale) and antiemetic use (4 items with *yes/no* response and 4-point Likert scale assessing usefulness). However, the subscale of duration has been excluded after poor responses from the participants complaining that it was hard to

recall or determine the duration of CINV episodes. Therefore, a total of 12 items were answered by the patients.

The validity and reliability of the EORTC QLQ-C30 in measuring the HRQoL of cancer patients in multi-cultural clinical research settings have been reported by Aaronson and colleagues [10]. It was designed to be cancer-specific, multi-dimensional in structure, appropriate for self-administration, applicable across a range of cultural settings and suitable for use with additional site- or treatment specific modules. The translated and validated version of EORTC QLQ-C30 in the Malay language [11] was employed in this study. This questionnaire contains 30 items including five functional scales (physical, emotional, cognitive, social and role), three symptom scales (fatigue, pain, and nausea/vomiting), a global health scale and six single items assessing symptoms (dyspnea, sleep disturbance, appetite loss, constipation, diarrhea) and financial impact of the disease. Items were scored and scales were constructed using the recommended procedures. The raw scores were linearly transformed to obtain standard scores in the range of 0-100 for each of the scales and single items. A high scale score represents a higher response level. Thus, a high score for a functional scale represents a high/ healthy level of functioning and a high score for the global health status represents a better HRQoL. On the other hand, a lower score for symptom domains and single items indicated fewer symptoms, hence better HRQoL.

### ***Statistical analysis***

The Statistical Package for the Social Science (SPSS, Version 16.0, 2007) was used for data compilation and statistical analysis. Descriptive statistics were used to assess the incidence of CINV, anti-emetic usage and HRQoL profile. Initial normality test carried out utilizing the HRQoL score as dependent variable showed that normality requirements were violated (Shapiro-Wilk test =  $p < 0.05$ ; data was positively skewed). Therefore, in assessing the subsequent objectives, non-parametric correlation was performed to evaluate the association between

two numerical variables (expressed as Spearman's  $r$ ) and Mann-Whitney U test was carried out to test for differences between groups (continuous data). The probability of committing type-1 error was set at 5% level.

## Results

In a period of six months, a total of 41 female respondents participated. Participants' age ranged from 24 to 68 years (mean =  $49.1 \pm 9.6$ ). Majority were Malays, married, unemployed or housewives, and completed secondary school

education. Over half of the respondents could be considered as newly diagnosed ( $\leq 1$  years after diagnosis) with no family history of malignancy. Patients were predominantly in Stage Three and receiving moderately emetogenic chemotherapy. Nearly all the patients (97.6%) received a 5-HT<sub>3</sub> antagonist (granisetron) which was administered commonly for two days. This anti-emetic therapy is usually supplemented by a corticosteroid (dexamethasone) (75.6%) for four days (concurrently administered). Patients' demographics and clinical characteristics are presented in Table 1.

**Table 1. Patients Demographics and Clinical Characteristics.**

Characteristics	Frequency <i>n</i> =41	Percentage (%)
Age (mean $\pm$ sd*)	49.1 $\pm$ 9.6 years	
Ethnicity		
Malay	38	92.7
Chinese	3	7.3
Marital Status		
Married	31	75.6
Single/ widowed	10	24.4
Education level		
Never attended school	4	9.8
Primary	5	12.2
Secondary	26	63.4
Tertiary	6	14.6
Occupation		
Employed	19	46.3
Housewife/ Unemployed	22	53.7
Monthly household income		
<RM 1000	11	26.8
$\geq$ RM 1000	30	63.2
BMI (mean $\pm$ sd*)	25.3 $\pm$ 4.5 kg/m <sup>2</sup>	
Years after diagnosis		
$\leq 1$ years	30	73.2
> 1 years	11	26.8
Family history of malignancy		
Yes	12	29.3
No	29	70.7
Stages of breast cancer		
1 & 2	19	46.3
3 & 4	22	53.7
Chemotherapy emetogenicity		
Moderately	40	97.6
Highly	1	2.4

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Anti-emetic medication**		
5-HT <sub>3</sub> antagonist	40	97.6
Corticosteroids	31	75.6

\*sd= standard deviation

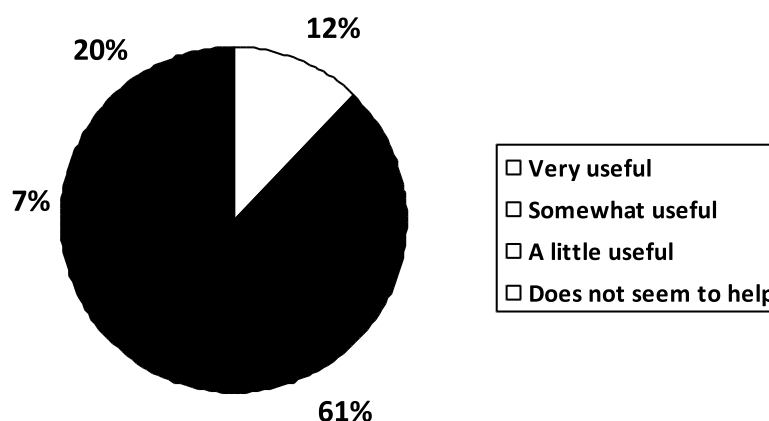
\*\*Combination possible, percentage > 100%

Despite the administration of antiemetic therapy, 90.2% of breast cancer patients continued to experience nausea during or after chemotherapy, whereas vomiting was reported by 12% of patients (Table 2). Almost half of those reported to have nausea rated the intensity as 'severe' during its worst with no time more severe as any other. Out of 12 patients who experienced vomiting, 11 considered their symptom to be severe at its worst, which mostly occurred within

12 hours after chemotherapy administration. Concerning anticipatory CINV, a lower percentage of patients reported this event (17%), with over half recorded to have mild nausea (57.1%). The use of oral anti-emetic was reported by 87.8% of patients and the majority expressed their satisfaction with this pharmacological therapy as being 'somewhat useful' (Figure 1).

**Table 2. Prevalence of Nausea and Vomiting During or After Chemotherapy.**

Symptom	Nausea, n (%)		Vomiting, n (%)	
Occurrence	Yes	No	Yes	No
	37 (90.2)	4 (9.8)	12 (29.3)	29 (70.7)
Severity				
Little	14 (37.8)		-	
Moderate	5 (13.5)	-	1 (8.3)	-
A lot / severe	18 (48.7)		11 (91.7)	
Duration				
0-12 hours post-chemotherapy	14 (37.8)		7 (58.3)	
12-24 hours post-chemotherapy	4 (10.8)		1 (8.3)	
No specific time	19 (51.4)	-	4 (33.4)	-



**Figure 1. Patients' Satisfaction with the Use of Anti-emetic.**

Table 3 reports the responses to the EORTC QLQ-C30 for all patients as well as their association with *Global Health Status*. The

median score for *Global Health Status* for breast cancer patients who were receiving chemotherapy treatment was 50.0 (IqR= 16.7).

*Social Functioning* subscale emerged as the best functional outcome but lowest scores were noted for *Role* and *Emotional Functioning*. This cohort also suffered from fatigue and *pain* ( $p < 0.05$ ) while other symptoms seemed to have negligible to little effects. The least impairments were reported with regard to *Nausea and Vomiting*,

*Dyspnoea*, *Insomnia*, *Appetite Loss*, *Constipation*, *Diarrhoea* and *Financial Difficulties*. Results of univariate analysis indicated that *Emotional*, *Fatigue* and *Pain* were linearly and fairly correlated with HRQoL. Patients with better emotional status experienced better HRQoL whereas *Fatigue* and *Pain* were inversely correlated with HRQoL.

**Table 3. Median and Interquartile Range (IqR) of EORTC QLQ-C30 Subscale Scores and Their Correlation with Global Health Status.**

Scale/Item	Median	IqR	Correlation coefficient	p-value
<b>*Global health status</b>	50	16.7	-	
<b>*Functioning</b>				
Physical functioning	80.0	14.5	0.068	0.671
Role functioning	67	33.3	0.271	0.086
Emotional functioning	67	66.7	0.435	<b>0.005</b>
Cognitive functioning	83	25.0	0.103	0.520
Social functioning	100	0.0	0.057	0.723
<b>†Symptoms/items</b>				
Fatigue	33	30.5	-0.417	<b>0.007</b>
Nausea and Vomiting	0	0.0	-0.150	0.348
Pain	33	33.3	-0.387	<b>0.012</b>
Dyspnoea	0	0.0	-0.208	0.192
Insomnia	0	66.7	-0.301	0.055
Appetite loss	0	33.3	-0.274	0.083
Constipation	0	33.3	0.199	0.213
Diarrhoea	0	0.0	0.027	0.867
Financial difficulties	0	0.0	-0.144	0.370

\* Score range 0-100 = higher score indicates better HRQoL

† Score range 0-100 = higher score indicates worse HRQoL

For univariate analysis, only the severity of nausea and the occurrence of vomiting were available due to balance number in each group. Patients with ‘a lot’ and ‘moderate’ nausea reported significantly more fatigue compared to those with little nausea (Table 4). Patients with little nausea displayed better HRQoL mainly in

*Global Health Status*, *Role*, *Emotional* and *Cognitive Functioning* ( $p > 0.05$ ). In addition, patients who experienced vomiting reported lower HRQoL than those who did not ( $p = 0.011$ ). However, decrement in emotional and cognitive function was observed among patients who experienced vomiting.

**Table 4. Comparison of HRQoL Subscales by CINV (Incidence / Severity)**

	Mean Rank (Median)					
	Severity of nausea			Vomiting occurrences		
	Little	Moderate and a lot	p-value	Yes	No	p-value
<b>*Global health status</b>	23.1 (67)	16.5 (50)	0.056	14.1 (50)	23.9 (50)	<b>0.011</b>
<b>*Functioning</b>						
Physical functioning	20.1 (80)	18.3 (80)	0.624	22.0 (83)	20.6 (80)	0.728
Role functioning	20.5 (75)	18.1 (67)	0.502	21.9 (67)	20.6 (67)	0.731
Emotional functioning	21.5 (75)	17.5 (67)	0.271	17.6 (45)	22.4 (66)	0.239
Cognitive functioning	22.2 (100)	17.0 (83)	0.128	17.9 (83)	22.3 (100)	0.245
Social functioning	18.2 (100)	19.5 (-)	0.200	21.5 (-)	20.8 (100)	0.520
<b>†Symptoms / items</b>						
Fatigue	14.1 (28)	21.9 (44)	<b>0.029</b>	22.3 (33)	20.5 (33)	0.642
Nausea and Vomiting	19.4 (0)	18.7 (0)	0.802	20.3 (0)	21.3 (0)	0.751
Pain	15.3 (33)	21.2 (33)	0.090	22.3 (33)	20.5 (33)	0.643
Dyspnoea	18.2 (100)	19.5 (100)	0.523	21.7 (0)	20.7 (0)	0.692
Insomnia	18.3 (0)	19.4 (0)	0.730	22.4 (17)	20.4 (0)	0.603
Appetite loss	18.0 (0)	19.6 (0)	0.574	22.3 (0)	20.5 (0)	0.589
Constipation	19.4 (0)	18.8 (0)	0.854	22.7 (0)	20.3 (0)	0.493
Diarrhoea	20.9 (0)	17.8 (0)	0.214	21.9 (0)	20.6 (0)	0.647
Financial difficulties	18.9 (0)	19.1 (0)	0.942	18.5 (0)	22.0 (0)	0.221

\* Score range 0-100 = higher score indicates better HRQoL

† Score range 0-100 = higher score indicates worse HRQoL

## Discussion

The study results demonstrate that a significant proportion of patients remain to suffer CINV even after usual anti-emetics management. This finding was slightly higher than the previous studies involving a larger number of patients (n=124) whereby 70% of the oncology patients receiving moderately ematogenic chemotherapy experienced either nausea or emesis or both [12]. Although a smaller proportion of the patients claimed to have vomited, majority still experienced severe nausea. A study showed that the incidence of nausea was reported to have

actually increased despite reduction in the incidence of vomiting when antiemetic treatment (5-HT<sub>3</sub> antagonist and corticosteroids) was administered [13]. Adequate control of CINV might have been compromised due to the fact that antiemetic treatment regimens are actually influenced by several risk factors such as ematogenicity of chemotherapeutic agents as well as patients-related risk factors. Patients treated with the high risk emetic agent, elderly, women and people with previous CINV experience possessed higher risk towards CINV [14]. In response to the nature of breast cancer itself which affected mostly women, this trait

may have indirectly marked up the incidence of CINV events in our samples. The incidence and severity of CINV among this sample population indicate that there is still room for improvement towards better control of CINV perhaps through the introduction of complementary medicine. Even so, most of the patients have taken oral anti-emetic medications and perceived them as rather beneficial in managing their symptoms.

The psychological impact of breast cancer has also received considerable attention. Many studies have shown that psychological distress impaired HRQoL particularly with regard to emotional functioning, mental health, social functioning and consequently the overall quality of life [15]. The diagnosis of the disease, fears and concerns regarding death and disease recurrence, impairment of body image, and alteration of femininity, sexuality and attractiveness have very much contributed to this psychological distress [16-18]. Apart from that, difficulties in concentration have been identified as a significant stressor following cancer treatment [19]. Nausea and vomiting could be one possible stressor in which their presence and severity could weaken patients' concentration and subsequently may influence their individual role and function. Qualitative research has revealed that women with cancer experienced cognitive difficulties which affect their functioning at home and at work [20]. In our sample, the lowest scores were recorded for *Emotional and Role Functioning* and these findings were possibly associated with the psychological impacts. However, it is of interest that social functioning appeared as the best domain which was supported by the fact that patients received unconditionally substantial support from their family and friends [21].

Consistent with a previous study [15], emotional, fatigue and pain were largely associated with HRQoL. Byar et al. [22] reported that during adjuvant breast cancer chemotherapy treatments, fatigue level were moderately intense, compromising HRQoL level. The symptom distress including increased severity of nausea at the time of treatment and at midpoints of chemotherapy cycle has been noted

to intensify fatigue level [22]. Other than that, an analysis of 1,957 breast cancer survivors after one to five years of diagnosis found that depression and pain were the strongest predictors of fatigue [23]. In our study, patients were mostly affected by fatigue and pain but the other symptoms possessed negligible to little effects included nausea and vomiting. It is noted that majority of them were receiving the adjuvant chemotherapy following surgery treatments making them more liable to treatment side-effects [15] such as fatigue and pain. Considering our cross-sectional study design whereby the assessment was completed prior to chemotherapy treatment, minimal detection of symptoms was expected since the adverse effects were usually most intense during the first 3 days after chemotherapy [5]. This could be the reason why only minor impairments were reported with regard to nausea and vomiting, dyspnoea, insomnia, appetite loss, constipation and diarrhoea. Apart from that, patients who experienced vomiting exhibited lower HRQoL than those who did not suggesting possible close association between the occurrence of vomiting and HRQoL status. A previous study involving larger number of patients (n=832) reported similar outcomes in which the differences in HRQoL between patients with and without vomiting were significantly substantial mainly with regard to *Social, Cognitive Functioning* and *Global Health Status* [24]. However, it is important to point out that not all of the deterioration in HRQoL is largely attributable to nausea and vomiting considering that the presence of these symptoms could also have been contributed by other effects of chemotherapy and possibly physiological changes of the underlying disease itself.

Nonetheless, our study findings should be interpreted in light of several methodological limitations. One potential limitation might be caused by restricted patients recruitment at only two study centres (convenience sampling) which might therefore not be entirely representative of all chemotherapy breast cancer patients. Still, our study sample had generated evidence on CINV in relation to HRQoL profile. Another possible drawback involves the homogeneity of

study sample in terms of cancer diagnosis. The findings are therefore not necessarily generalizable to the other types of malignancy. Despite these limitations, our preliminary study has generally ascertained that CINV remains poorly controlled and significantly interferes with HRQoL particularly among chemotherapy breast cancer patients. Larger studies in multiple oncology settings could substantiate these early findings, hence providing patients-centred solutions for evidence-based selection of optimal treatments in the future.

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**Corresponding author: Pei Lin Lua, Head, Centre for Clinical and Quality of Life Studies (CCQoLS), Faculty of Medicine and Health Sciences, Universiti Sultan Zainal Abidin (UniSZA), Kampus Kota, Jalan Sultan Mahmud, 20400 Kuala Terengganu, Terengganu, Malaysia.**

**Email:** peil(lua)@unisza.edu.my or peil(lua)@hotmail.com.

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ORIGINAL ARTICLE

**PREVALENCE OF ANXIETY AND DEPRESSION AMONG  
DOCTORS WORKING IN A PRIVATE HOSPITAL  
IN PAKISTAN**

*Naheed Nabi\*, Aisha Yousuf\*\*, Azam Iqbal\*\*\**

**\*Lecturer, Department of Family Medicine, Aga Khan University, Stadium Road, 74800, Karachi, Pakistan; \*\*Assistant Professor, Department of Family Medicine, Ziauddin University and Hospital, 4/B, Shahr-e-Ghalib, Block 6, Clifton, 75600, Karachi, Pakistan; \*\*\*Assistant Professor, Department of Community Health Sciences, Aga Khan University, Stadium Road, 74800, Karachi, Pakistan.**

**Abstract**

**Objectives:** Anxiety and depression among doctors may negatively affect quality of patient care, patient safety, and professionalism. Despite the potentially serious personal and professional consequences of depression, there are very limited researches done on depression among Pakistani doctors. Therefore this study was aimed to determine the prevalence of anxiety and depression among doctors in a private teaching hospital in Pakistan. **Method:** This was a cross-sectional survey conducted in a tertiary care teaching hospital in Pakistan. The Self-Reporting Questionnaire for Anxiety and Depression (SRQ 20) Scale was administered to a sample of 300 medical doctors. Chi-square test and multiple regressions were used for data analysis. **Results:** Anxiety and Depression among doctors was measured to be 27.3 % (95% CI: 22.3, 32.4) in our study. **Conclusion:** More than one quarter of our doctors are suffering from anxiety and depression but this subject is fairly neglected in Pakistan and more studies should be conducted to collect more validated information on this matter. *ASEAN Journal of Psychiatry, Vol. 13 (1): January – June 2012: 13-19.*

**Keywords:** Anxiety, Depression, Doctors, Pakistan

**Introduction**

Medical doctors have an important role to play in promoting public wellbeing, providing health care for ailing population and advancement of medical science [1]. According to the constitutional principle of World Health Organization (WHO), health is universally recognized as a fundamental right of every human being without discrepancy of race, religion, political belief, financial or social status [2]. As Human beings, doctors are not protected to the occurrence and consequences of psychological illnesses [3].

Although the actual incidence of anxiety and depression in medical doctors is unknown, different studies on medical students in Saudi Arabia and Pakistan reported 47% to 73% prevalence of anxiety and depression [6-8]. The world's overall mean point prevalence is 5-10% [4] and in Pakistan it is 33.62% [5]. A study among a family medicine faculty in Orlando reported the prevalence of depression to be 7% for mild and 5% for moderate to severe scoring [9]. A Pakistan Khuwaja study reported 39 % prevalence of anxiety and depression only among general practitioners [10]. People with major depression may experience such extreme

emotional pain that they consider or attempt suicide. At least 15 percent of seriously depressed people commit suicide [11]. In a meta analysis of 25 studies from 1960 to 2003, rates of male and female physician suicide were 1.4 times and 2.3 times respectively higher than for the general population [12].

Psychologists agree that stressful experiences can trigger anxiety and depression among medical doctors. They worry about not being able to shoulder their responsibilities towards family and friends, and are fearful of being a burden for others [13].

Anxiety and depression in doctors not only affect their own personal and family lives, but also may have serious consequences on the wellbeing of the community in general [13]. Medical errors have established increased interest since 1999, when the Institute of Medicine reported that up to 100, 000 patients in United States die each year because of preventable unpleasant measures and the stress of medical resident training, including lack of sleep and leisure time, are among the most commonly cited reasons for such errors [14, 15]. Residents who are depressed are about six times more likely to make medication errors than those who are not depressed [15]. Despite the potentially serious personal and professional consequences of anxiety & depression, there are very limited researches done on depression among Pakistani doctors. Limited local research highlights that anxiety and depression is common in Pakistani medical students [7, 8] and general practitioners [9] and there has not been any local study done to determine anxiety and depression in all medical professionals at any one time. This is important because then all confounders can be same for all the study population. If the prevalence of anxiety & depression are high enough, preventive measures including regular screening process for detecting depression and proactive programs to address risk factors might be of value.

## **Methods**

A cross sectional survey was conducted at the Aga Khan University Hospital (AKUH) in

Karachi, Pakistan from August 2005 till October 2005. A total of 300 medical doctors were required with an anticipated prevalence of anxiety and depression of 50% precision of 6% and level of significance of 5% after adjustment of non response rate of 15%. The total population of registered medical doctors was registered with Pakistan Medical and Dental council (PMDC) [16] in 2005 was 115989. Subjects met inclusion criteria if they had been employed at the hospital for at least 6 months and registered with PMDC. Those who were not willing to give signed consent for participation prior to survey were excluded from the study. A non-probable purposive sampling was done. All medical doctors who were fulfilled the inclusive and exclusive criteria were approached in clinics, operation room, emergency room, intensive care unit, laboratory, radiology and seminar halls. An anonymous two-page survey to maintain the confidentiality was distributed. Surveys consisted of some independent variables such as age, gender, marital status, educational status and current working level. A 20 item of Self Reporting Questionnaire for Anxiety and Depression (SRQ 20) in English version was used [17] to detect anxiety and depression. The score of 8 out of 20 was considered positive for anxiety and depression. The sensitivity of SRQ at the threshold of this score was 72.2% and specificity was 89.3% [17]. The survey forms were returned on the same day.

Data was analyzed on Statistical Package for the Social Sciences (SPSS) version 16. Prevalence of anxiety and depression along with 95% confidence interval was calculated. Pearson's chi-square test was used to observe the association between anxiety & depression status and other demographic variables. Crude odds ratio and their 95% confidence interval (95% CI) were computed through logistic regression model developed for each independent variable. Variables with a significant P value 0.25 in univariate analysis were considered for inclusion in the multivariable model to get more numbers of variables [18]. As a further step, we also determined the goodness-of-fit of the model to measure how well it described our response variable (adequacy of knowledge) by using Hosmer-Lemeshow test [18]. To keep the

subject's identification confidential and to get honest information, the survey forms were kept anonymous. All ethical considerations including informed consent were ensured. . All efforts were made in this study to achieve the ethical considerations in accordance with the 'Ethical principles for medical research involving human subjects' of Helsinki Declaration [19].

## Results

**Table 1. Demographics Data: Distribution of working title of medical doctors by Position, Age and Gender.**

Working Title	Mean Age in years (SD)	Male (number)	Female (number)	Marital Status (number)			Total, N (%)
				Single	Married	Other*	
Intern	25.3±2.25	19	35	45	7	2	54 (18%)
Resident	29.8±3.6	59	59	53	62	3	118 (39.3%)
Medical Officer	33.5±4.6	15	16	7	20	4	31 (10.3%)
Senior Medical Officer	38.4±5.5	20	14	5	26	3	34 (11.3%)
Consultant	41.6±5.2	32	31	4	54	5	63 (21%)
Total	32.6±6.9	145	155	114	169	17	300

\*Other: engaged, separated or divorced; SD: Standard Deviation

### ***Distribution of anxiety and depression among study population***

Out of 300 doctors who were contacted the prevalence of anxiety and depression was found to be 27.3% (82) with 95% CI of 22.3 to 32.4. Among the anxious & depressed, 39.0% (32/82) had thoughts of ending their lives. An association between anxiety and depression status and rank of the medical practitioners was

### ***Demographic Characteristics of Study Population***

All of the medical doctors who were approached agreed to be recruited in the study. Most of the sample consists of working residents and then the consultant followed by interns, senior medical officers and medical officers. Other demographics are shown in Table 1.

found (p-value<0.001). It was highest in interns (OR 4.80; CI=2.13, 10.83) followed by residents, consultants, senior medical officers and then the medical officers. There were more Female doctors suffering from anxiety and depression compared to their male colleagues (OR 2.08; CI=1.23-3.51. Similarly, young doctors are more anxious & depressed as compared to their senior colleagues (OR 1.87; CI=1.02-3.42) (Table 2).

**Table 2. The distribution of Crude Odds Ratio (95% CI) for anxiety and depression by demographic factors of study population.**

Variables	All participants n	Anxiety & Depression present n (%)	Crude OR (95% CI)	p-value
Age				0.042
34 years and less	179	55(75.3)	1.87(1.02-3.42)	
35 years and more	94	18( 24.7)	1.00	
Gender				0.006
Female	155	53(34.2)	2.08(1.23-3.51)	
Male	145	29(20.0)	1.00	
Marital status				0.080
Married	169	38 (22.5)	0.60(0.35-1.03)	
Others*	17	7 (41.2)	1.46(0.51-4.13)	
Single	114	37 (32.5)	1.00	
Working level				<0.001
Intern	54	30 (55.6)	4.80(2.13-10.83)	
Resident	118	26 (22.0)	1.08(0.51-2.30)	
Medical Officer	31	6 (19.4)	0.92(0.31-2.71)	
Senior Medical Officer	34	7 (20.6)	0.99(0.35-2.79)	
Consultant	63	13 (20.6)	1.00	

\*Others: engaged, separated or divorced; OR = Odds Ratio

The following variables were subjected to the multiple regression analysis: 'gender' and 'working levels'. The significant ( $p < 0.05$ ) independent predictors for anxiety and

depression among study population were female gender (OR 1.865; CI=1.079, 3.224) and doctors doing internship (OR 4.504; CI=1.982, 10.234).

**Table 3. The distribution of Adjusted Odds Ratio (95% CI) for anxiety and depression by demographic factors of study population.**

Variables	Adjusted OR	95% CI	p-value
<b>Gender</b>			0.026
Male			
Female	1.86	1.079, 3.224	
<b>Working level</b>			<0.001
Intern	4.504	1.98, 10.23	
Resident	1.083	0.51, 2.31	
Medical Officer	0.91	0.31, 2.70	
Senior Medical Officer	1.05	0.37, 2.97	
Consultant			

## **Discussion**

This study is the first one encountered on anxiety and depression among all the working levels of doctors in a teaching hospital in Pakistan with a good response rate. In this study the overall prevalence of anxiety and depression among medical doctors was 27.3 %, this is comparable to the Pakistan's overall prevalence of anxiety and depression among general population (34%). This prevalence differs for both genders and ranges from 29% to 66% for females and 10% to 33% for males [5].

The prevalence of anxiety and depression is higher in our study among medical doctors than from other various international studies [9, 20-21]. One important reason for this high prevalence could be due to the fact that we determine both anxiety and depression while other studies measures only depression. Another possible reason could be that we collected the data in August until October when the season was changing. Various studies have shown the effect of fall and winter seasons in causing depression as compared to summer and spring season [22].

Khuwaja et al reported a higher prevalence (39 %) of anxiety and depression among family practitioners. Exploration of the reason for these differences is limited by different screening intervals and survey instruments and may be family physicians are more stressed out and depressed than other specialties [10]. The prevalence of anxiety and depression was found to be significantly higher among interns and residents as compared to the medical officers, senior medical officers and consultants. This high prevalence could be due to the reason that we collected data during August, September and October that is the most stressful period for trainees due to examination for evaluations and promotion into the following year while there are no examinations for medical officers or consultants and therefore they show less anxiety and depression. One important reason for higher anxiety and depression among interns and residents could be due to their long working hours and night shifts as they stay in hospital more than medical officers and consultants [10].

Their long hours in hospital and their strenuous ongoing medical training, result them to exercise less, sleep less, and spend less time in activities outside the hospital and thus causes health problems as shown by the study conducted in Ohio among physicians and medical trainees [23]. This study shows that female doctors were suffering from anxiety and depression at significantly higher rates than male doctors that is normally observed in the general population [4] in consistent with other studies [10, 24]. They probably have contributing factors such as maintaining multiple responsibilities at one point as home-makers, professionals, wives, and mothers may explicate the higher rate of depression in females.

There was no significant association between marital status and anxiety & depression as in other studies among doctors [24]. In this study found 10.7 % doctors had thoughts of ending their lives. This was almost equivalent to suicide among depressed general population [11]. This finding is significant and also consistent with existing data that a mentally disturbed doctor is more likely to cause significant medical errors and can harm the patient also [13-15].

## **Strengths and limitations**

This survey is the first of its kind as there are few researches that have been done regarding the assessment of anxiety and depression among all levels of working doctors at one point with a hundred percent response rates from 300 respondents.

At the same time, we recognize that our study had a few limitations. Our sample was not distributed equally among different levels of working doctors such as we had more residents and interns than consultants and medical officers. The outcome of the study may not be a representative of other hospitals, since the study was done only in one institution. This was a cross-sectional study, therefore to recognize causal associations among examined factors are not possible. The assessment of depressive symptoms was based on self-report. Therefore there are some potential for reporting bias because of respondents' interpretation of the

questions or because of recall bias or concerns about the stigma attached. Underreporting is also possible. Some causal issues were not evaluated, for example, it is possible that any current significant life events like death in immediate family members or sitting for examinations in near future could possibly result in anxiety and depression. The survey was done in the fall season only and hence cannot comment on seasonal depressive effects as anxiety and depression may occur at different times a year.

## Conclusion

The significant amount of anxiety and depression found among doctors in this study should prompt further work. Studies using more powerful designs would help to identify factors causing anxiety and depression, which result in attrition among doctors.

**Conflict of interest:** The authors declare that they have no conflicts of interest.

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**Corresponding author: Dr. Aisha Yousuf, 68 B/1 Khyaban-e-Bahria, Phase 7, D.H.A. Karachi, Pakistan.**

**Email:** dr.aishayousuf@gmail.com

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ORIGINAL ARTICLE

**PSYCHOLOGICAL MORBIDITY AND SOURCES OF JOB  
STRESS AMONG DOCTORS IN YEMEN**

*Sami A R Al-Dubai\*, Krishna G Rampal\*\**

**\*Department of Community Medicine, International Medical School,  
Management and Science University (MSU), 40100 Shah Alam, Malaysia,**

**\*\*Perdana University Graduate School of Medicine, Perdana University,  
Kuala Lumpur, Malaysia.**

**Abstract**

**Objective:** The objective of the present study was to determine the prevalence and factors contributing to psychological morbidity among doctors in Sana'a city, Yemen. **Methods:** A cross sectional study was conducted among 442 Yemeni doctors. The (GHQ12) was used as a measure of psychological morbidity. Sources of job stress were determined using a 37-item scale questionnaire. **Results:** The prevalence of psychological morbidity was 68.1 %. Gender, age range of 30 – 39 years old, chewing Khat, type of residence and income were significantly associated with psychological morbidity ( $p < 0.05$ ). Five stressors out of 37 were significantly associated with psychological morbidity. On multivariate analysis, the significant predictors of psychological morbidity were being 30 – 39 years old, patients not trusting doctors, not chewing Khat, uncertainty and insecurity. **Conclusion:** The prevalence of psychological morbidity in Yemeni doctors was higher than those reported internationally and it was associated with many important job stressors. *ASEAN Journal of Psychiatry, Vol. 13 (1): January – June 2012: 20-30.*

**Keywords:** Doctors, Psychological Morbidity, Stress, Yemen

**Introduction**

Mental health is an important issue in the workplace particularly in developing countries. There is lack of studies regarding mental health among Yemeni doctors. This study found a high prevalence of psychological morbidity among Yemeni doctors. Age, gender, low income, uncertainty and insecurity were associated with psychological morbidity in this study.

Job stress is an important issue in the workplace not only because it affects doctors' health, but also because it impairs the quality of health service doctors are expected to deliver. Severe or chronic stress can result in disease or death. Musculoskeletal disorders, high blood pressure,

disturbed metabolism (risk of Type II diabetes) and cardiovascular problems may be the result of stress [1]. In Western Australia, stress is generally viewed as a disease [2]. Doctors are considered to be members of high stress occupations [3] and previous studies found that the prevalence of stress using the General Health Questionnaire (GHQ) ranged from 16.9% to 52% among doctors in the United Kingdom [4 – 9] and 30.7% to 41% among doctors in Australia [10,11]. In Saudi Arabia, the prevalence of psychological morbidity using GHQ among postgraduate medical trainees was 59%, ranging from 47% for Paediatrics to 93% for Internal Medicine [12] and was significantly higher in women compared to men in that study. In Iraq, 97 (55.7 %) out of 132 physicians reported their

work related stress as severe or moderate [13].

There were no studies done in Yemen regarding mental health among medical doctors . However, a study was done among 783 Yemeni Medical students in Sana'a University which found that the prevalence of mental morbidity (using Goldberg's General Health Questionnaire) was 27% [14].

The most common source of stress mentioned in the literature included home-work interface, home-work overload [15], demands of work made on personal/social life [16], increased and inappropriate demands from patients [17], difficulty in finding a locum, the working environment [18], lack of the necessary staff to do a job and inadequate facilities and financial resources [19 – 21]. Concerns about money, exposure to toxic substances and exposure to infectious patients were mentioned as important sources of stress by all categories of hospital workers [22].

Regarding sources of stress in the developing countries, a study in Saudi Arabia among 414 hospital staff showed that insufficient technical facilities, absence of appreciation, long working hours, and short breaks were significantly associated with work-stress among staff. Age and experience were significantly and negatively associated with work-stress level. Results also revealed that Saudi participants showed significantly higher level of work-stress than the non-Saudis [23]. In Turkey, the most common causes of stress to doctors were not enough time to follow developments in medicine, and the limited social life due to heavy workloads [24].

Republic of Yemen is a Middle Eastern country located on the Arabian Peninsula in Southwest Asia with a population of 21.5 million people. No study has been conducted on psychological morbidity or sources of stress among medical doctors in Yemen. This study has been conducted to determine the prevalence and factors contributing to psychological morbidity among doctors in Sana'a City Yemen. This study hypothesized that economical and management factors would be associated with psychological morbidity.

## **Methods**

### ***Participants***

A total of 500 questionnaires were distributed manually to all the available Yemeni doctors (specialists and non-specialists) in three main government hospitals in Sana'a city in the period from December 2007 to July 2008. Four hundred forty two doctors returned completed questionnaires with observed response rate of 88.4%. Non-Yemeni doctors and those with less than one year duration of work and/or those who worked in the private sector only were excluded from this study. Written consent was obtained from the participants and they were given written information about the conduct of the study enclosed with the questionnaire form.

### ***Research instruments:***

#### ***A- Psychological morbidity***

The 12-item version of the General Health Questionnaire (GHQ12) is a reliable method of measuring minor psychological disorders among general populations and has also been validated as a suitable measure of mental health in occupational studies [5, 25]. It has been used as a short screening instrument, producing results that are comparable to longer versions of the GHQ 28 [5, 25, 26]. GHQ12 has been subjected to factor analysis in a variety of countries and the results showed that two factors expressing depression and social dysfunction could be identified [27]. Each item was rated according to whether they have been experienced 'not at all', 'the same as usual', 'rather more than usual' or 'much more than usual' in the past few weeks. Scoring was on a 0–0–1–1 basis (i.e., a score of 0 or 1 was given a value of 0 and a score of 2 or 3 was given a value of 1. This can be scored 0 to 12. Psychological morbidity was defined as a score of 4 or more on the GHQ-12. This approach was used in the previous studies [5,9,26].

#### ***B- Sources of Job Stress:***

Sources of job stress were determined by a 37- obtained from the literature and by discussion

with a group of Yemeni doctors. Each item was scored on a 3 point Likert scale, where a value of 0 equals “not applicable”, a value of 1 refers to “disagree” and a value of 2 refers to “agree”.

### ***C- Socio-demographic and work characteristics:***

A questionnaire was developed for this study to obtain demographic and job characteristics. The socio-demographic factors included age, sex, qualification (junior general practitioner or specialist), marital status, chewing Khat. Chewing Khat (*catha edulis*) is a legal social and a culture-based activity common in Yemen. It is used as a stimulant as it contains cathine and cathinon that have amphetamine-like effect. Work characteristics included length and type of employment, number of working hours per week and total monthly income.

Data analysis was done using “Statistical Package for Social Sciences (SPSS version 13). All the continuous socio-demographic and work characteristic variables were categorized. Differences in the prevalence of psychological morbidity were tested with Chi square tests (Yates’ correction) for binomial variables. In cases of variables with three categories, Odds Ratio (OR) were obtained by simple logistic regression. To test the relation between each source of stress and psychological morbidity,

“disagree” was considered as the reference group and simple logistic regression was used to obtain OR. Multiple logistic regression was used to determine the predictors of psychological morbidity after the multicollinearity was checked for. All variables that were significantly associated with psychological morbidity in the bivariate analysis were entered into the logistic regression. The internal consistency of the GHQ-12 was assessed by Cronbach's alpha coefficient. Furthermore, the factor structure of the questionnaire was extracted by performing principal component analysis using oblique solution.

### **Results**

Of the 442 respondents, 260 (58.8%) were men, 246 (55.7%) aged 30-39 years, (34.7%), 153 were single (34.6), 278 (62.9%) were married and 303 (68.6%) were non-specialists. The mean age of doctors was  $33.3 \pm 5.7$  years and the age ranging from 25 to 55 years. Only 54 (12.4 %) have their own houses. The median of working hours with the government was 40 hours per/week ranged from 24 to 70 hours (including locum). Two hundred and twenty seven (51.4%) doctors were employed with the government only while 215 (48.6%) were employed with the government and working in the private sector as well (Table 1).

**Table1: Socio-demographic and job characteristics profile**

Variable		N	%
Gender	Male	260	58.8
	Female	182	41.2
Age groups(years)	≤29	140	31.7
	30 - 39	246	55.7
	≥ 40	56	12.7
Marital status	Single	153	34.6
	Married	278	62.9
	Divorce or Widowed	11	2.5
Speciality status	Non specialist	303	68.6
	Specialist	139	31.4
Chewing Khat	Yes	201	45.5
	No	241	54.5
Residence	House owner	54	12.2
	Not a house owner	388	87.8
Type of Employment	Government only	227	51.4
	Government and private	215	48.6
Duration (years)	≤5	225	50.9
	> 5	217	49.1
Hours of work with the government/week	≤40	245*	55.4
	> 40	192	43.4
Income from the government YR /month	≤40.000	338*	76.5
	> 40.000	102	23.1

\* Total is not 442 due to non-response.

### ***Sources of job stress in the work place:***

Table 2 shows sources of stress ranked by number and percentage of doctors who agree that they cause stress in the work place. The twelve most important stressors in the work place (in rank order) were lack of resources, lack of comfortable rooms for doctors on call, the stress and strain of general practice, arbitrary entrance of the patients, difficulty in finding a

locum, demand of job on family and social life, working environment, increasing workload, worrying about finances, quality and quantity of food given to doctors on call and exposure to occupational hazards. The five lower ranked stressors were examining patients of the opposite sex, patients not trusting doctors, paperwork, lack of emotional support at home and feeling of isolation.

**Table 2. The first 10 common sources of job stress ranked by number and percentage of doctors who agreed that they cause stress in the work place (N=442).**

Sources of job stress	Agree	
	N	%
Lack of resources	387	87.6
Lack of comfortable rooms for doctors on call	347	78.5
The stress and strain of general practice	340	76.9
Arbitrary entrance of the patients	340	76.9
Difficulty in finding a locum	324	73.3
Worrying about finances	324	73.3
Demand of job on family and social life	321	72.6
Working environment	311	70.5
Quality and quantity of food given to doctors on call	310	70.1
Exposure to Occupational hazards	306	69.2

***Internal consistency and factorial based validity of the GHQ12***

To test the reliability, the internal consistency of the questionnaire was measured using Cronbach's alpha coefficient. The alpha for the whole sample was found to be 0.82. Factorial validity of the GHQ12 was examined using exploratory factor analysis (Quartimax rotations) and showed that a two-factors structure was loaded that accounted for 43% of the variance. Except for item 3 (playing a useful part in

things), all other items were loaded in two distinct factors: 'psychological distress' and 'social dysfunction'. These two factor structures supports findings of previous studies [27, 28,29].

For those Yemeni doctors who responded to the questionnaire, 301 (68.1 %) scored 4 or more on the GHQ-12 indicating likely psychological morbidity. By using Chi-squared tests of proportions, the prevalence of psychological morbidity was significantly higher in: women compared to men (75.3%, 63.1% respectively).

**Table 3. Association between socio-demographics and job characteristics with psychological morbidity**

Variables		Cases N (%)	Not cases N (%)	OR (95% CI)
Gender	Men	164 (63.1)	96 (36.9)	1.8 (1.17- 2.7)*
	Women	137 (75.3)	56 (24.7)	
Age groups (year)	≤29	92 (65.7)	48(34.3)	1.44(0.76-2.7 )
	30 - 39	177 (72.0)	69 (28.0)	1.9 (1.0-3.5)*
	≥ 40	32(57.1.)	24 (42.9)	Reference §
Speciality status	Specialist	89 (64.0)	50 (36.0)	1.3 (0.86-2.0)
	Non specialist	212 (71.1)	91 (30.0)	
Marital status	Single	106 (69.3)	47 (30.7)	0.5 (0.1-2.4)
	Married	186 (66.9)	92 (33.1)	0.5(0.95-2.1)
	Divorce or	9 (81.8)	2 (18.2)	

	Widowed			Reference §
Chewing Khat	Yes No	112(55.7) 189 (78.4)	89 (44.3) 52 (21.6)	2.9 (1.9 -4.3)*
Residence	House owner Not a House owner	27 (50.0) 274 (70.6)	27 (50.0) 114 (29.4)	2.4(1.4-4.3)*
Duration of work (years)	≤5 >5	152 (67.6) 149 (68.7)	73 (32.4) 68 (31.3)	0.95 (0.64-1.4)
Employment	Government Private	163 (71.8) 138 (65.8)	64 (28.2) 92 (34.2)	1.4 (0.95-2.1)
Hours of work with the government/week	≤40 > 40	165 (67.3) 132(68.8)	80 (32.7) 77(31.3)	0.9 (0.62 -1.4)
Monthly income from the government (YR/month)	≤40000 > 40000	240 (71.0) 59 (57.8)	98 (29.0) 43 (42.2)	1.8 (1.1-2.8)*

\*: p<0.005, §: simple logistic regression was used. \*\* One USD= 200 Yemeni Rials (YR)

The results presented in Table 4 show the OR for “agree” and “disagree” categories only while “undecided” were omitted from the results. Only the significant associations were shown. Doctors who agreed that these sources of job stress caused stress to them were more likely to have psychological morbidity than those who reported

to disagree. These sources were: uncertainty and insecurity, poor status in the eyes of seniors, patients not trusting doctors, conflicting roles with other health professionals, and quality and quantity of food given to doctors on call (Table 4).

**Table 4: Association between psychological morbidity and sources of stress (for each item the reference category is "disagree")**

Sources of job stress	OR (95% CI)	P value
Uncertainty and insecurity Agree Disagree	2.6 (1.5-4.5) Reference	<0.001
Poor status in the eyes of your seniors Agree Disagree	1.9(1.1-3.1) Reference	0.013
Patients not trusting doctors Agree Disagree	2.2(1.2-4.0) Reference	0.007
Conflicting roles with other health professionals Agree Disagree	1.9(1.1-3.2) Reference	0.024
Quality and quantity of food given to doctors on call Agree Disagree	2.0 (1.1-3.8) Reference	0.035

### **Multivariate Analysis (Psychological morbidity)**

Variables which were significantly associated with psychological morbidity in the bivariate analysis were entered into logistic regression. Variables entered were: gender; chewing Khat; type of residence; income from the government; uncertainty and insecurity; poor status in the eyes of seniors; patients not trusting doctors;

conflicting roles with other health professionals and quality and quantity of food given to doctors on call. Significant predictors of psychological morbidity in the final model were age (30-39 years old); uncertainty and insecurity; patients not trusting doctors and not chewing Khat. Adjusted R-square = 16.4 which indicated that these variables accounted for 16.4% of variance (Table 5).

**Table 5: Predictors of psychological morbidity using multiple logistic regression**

Variables		$\beta$	S.E.	OR (95% CI)	P-value
Age (years)	$\leq 29$	0.080	0.352	0.9(0.46-1.84)	0.819
	30-39	0.649	0.324	1.9(1.02-3.60)	0.045
	>40	reference	reference	reference	
Uncertainty and insecurity	Agree	0.944	0.291	2.6 (1.5-4.6)	0.001
	Disagree	reference	reference	reference	
Patients not trusting doctors	Agree	0.766	0.324	2.2(1.14-4.06)	0.002
	Disagree	reference	reference	reference	
Chewing Khat	No	1.097	0.229	3.0 (1.9-4.7)	<0.001
	Yes	reference	reference	reference	

### **Discussion**

The response rates were comparable to those reported in other surveys [11,30]. This study showed that more than two thirds of Yemeni doctors (68.1%) have psychological morbidity. This prevalence was considerably higher than those reported in developed and developing countries for general medical working populations where the prevalence of psychological morbidity ranged from 21%-52% [4-11, 31,32]. However, our finding can be considered comparable to that found in Saudi Arabia (47% to 93%) [12] but that study had a small sample size and the psychological morbidity was measured by GHQ28. High prevalence of psychological morbidity in Yemeni doctors can be explained by the fact that Yemen is a developing country with low financial and economic levels, poor workplace environment and scarce resources compared to

western countries. This would be a result of the socio-political situation in Yemen caused by a downward trend in the economy, increased cost of living and poor infrastructure. In addition to these situations, there is an absence of national organizations to help doctors with stress like those present in the developed countries [16].

In this study, there was a significant gender difference in psychological morbidity: women had significantly higher prevalence of psychological morbidity (75.4%) than men (63.9%). This is in keeping with the results from other studies that used the GHQ12 [11,12]. Higher prevalence of psychological morbidity in women might be explained by the fact that women in our community still perceive gender inequality in many aspects of life including work. In addition to the same conditions faced by men and women in the workplace, women have another burden represented by pregnancy,

delivery and caring for children, higher social expectations and facing additional pressure in balancing their medical and domestic roles compared with male doctors. This study revealed that male junior doctors had significantly higher prevalence of psychological morbidity than male specialists. Similarly, Kapur et al. (1998) found that the levels of stress (by GHQ12) decreased with increasing medical seniority [33]. In addition, in this study, some important sources of stress were reported as stressful to non-specialists more than to specialists, such as, they felt more stressed by conflicting roles with other health professionals, dealing with managers, worrying about finances, examining patients of the opposite sex, patients not trusting doctors, feeling of isolation, competition from other doctors and lack of comfortable rooms for doctors on call. This might be a possible explanation of the high prevalence of psychological morbidity among non- specialists.

Despite all the negative aspects of chewing Khat [34], unexpectedly, this study showed that psychological morbidity was significantly higher in those who did not chew Khat. A possible explanation might be that doctors who chew Khat had significantly higher income. Another explanation might be that khat reduces stress. This study invites further research to explore the relation between Khat and psychological morbidity. Inability to purchase own house was significantly associated with high prevalence of psychological morbidity in this study and was a significant predictor of psychological morbidity on the multivariate analysis. Low salaries of doctors can explain their inability to have their own house as 82% of doctors agreed that financial difficulties was one of the important stressors in their work. In this study, low income was associated with high psychological morbidity. Ofili et al. (2004) found that the main cause of stress outside work was the failure with some personal projects such as inability to own personal houses [31]. Clarke and Singh (2004) also found a significant association between psychological morbidity and the financial state<sup>8</sup>. In this study, two stressors were significant predictors of psychological morbidity; patients not trusting doctors and disturbance of

home/family life by work. Some of the important predictors of psychological morbidity reported in the previous studies were patients' expectations [35], having to deal with patients' suffering, poor management [4] and work-home interface [8,10].

Three of the twelve most important stressors (lack of comfortable rooms for doctors on call, quality and quantity of food given to doctors on call and arbitrary entrance of patients at the clinics and departments) were particular features of this study as they addressed specific situations in Yemeni hospitals. The arbitrary entrance of patients at the clinics is due to absence of a computerized system that regulates the entrance of patients. For the other nine stressors, at least one of them was found to be an important stressor in other studies [4,9,10,20-22,36]. This study found that most of the sources of stress were mostly organizational and administrative indicating that the management may need to make organizational and administrative changes to improve the quality of health care services and the overall situation of Yemeni doctors. This study has some limitations. First, the cross sectional nature of this study does not allow to observe a causal relationship between the variables. The second limitation is the exclusive dependence on self reported rating scales, which may cause systematic positive or negative response tendencies. Third, Selection bias is a possible limitation in this study; i.e. stressed doctors are more likely to respond to surveys of stress and/or doctors report more stress when stress is the focus of study.

## **Conclusion**

This study found a high prevalence of psychological morbidity among Yemeni doctors (68.8%). This is unacceptable situation could be responsible for deteriorating health care service in Yemen. The prevalence of psychological morbidity was higher in women, non specialist men, those with low income and those who did not own houses. This study has identified the important factors (stressors) in the work place and showed that many factors particularly administrative and financial were associated with psychological morbidity that can affect the



mental health of Yemeni doctors. The current policies and strategies for improving the health care service should be reviewed and organizational and management reforms should be implemented that take into consideration doctors' rights and their welfare particularly their physical and mental well-being as well as the financial status. Building a supportive and healthy work environment, eliminating or minimizing the sources of stress and counseling of doctors to tackle pressures are important measures for managing stress. This study found some similarities in the stressors reported in the previous studies and showed that some factors were specific stressors for Yemeni doctors. The findings also suggested that the Arabic version of the 12-item GHQ is a reliable and valid instrument to measure psychological morbidity in Yemeni medical doctors.

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**Corresponding author: Sami Abdo Radman Al-Dubai, PhD, Department of Community Medicine, International Medical School, Management and Science University (MSU), Off Persiaran Olahraga, Section 13, 40100, Shah Alam, Selangor Darul Ehsan, Malaysia.**

**Email:** samidobaie@yahoo.com

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ORIGINAL ARTICLE

**AN EVALUATION STUDY OF PARENT MANAGEMENT  
TRAINING (PMT) PROGRAM IN NORTHERN THAI**

*Wachiraporn Arunothong\* & Saijai Waewsawangwong\**

**\*Psychiatry Department, Lampang General Hospital, 2 Prabat  
Muang Lampang 52000 Thailand.**

**Abstract**

**Objectives:** To examine the effectiveness of parent management training in Northern Thai parents in both the short and long term and to evaluate parental and environmental factors which contribute and maintain the effectiveness of parenting skills. **Methods:** A total of 41 primary caregivers were enrolled. All of them had children between 2-15 years old to care for. Enrolled participants had to complete PPT (parent practice test), home situation questionnaire (HSQ) and the oppositional defiant disorder (ODD) part in Swanson, Nolan and Pelham short form (SNAP-IV) questionnaire and were interviewed with the researchers prior to the program, at week 8, week 24 and week 54. They had to join PMT group which was conducted for 3 hours each week for 7 consecutive weeks. **Result:** The means scores of PPT which measured parenting skills outcome had increased significantly from the baseline and still maintained up to one year while HSQ scores, HSQ troublesome situations and SNAP-IV scores which measured troublesome home situations and disruptive child behaviors, respectively had decreased significantly from baseline and also maintained up to one year. Gender of the children, family income, educational level of the caregivers, activity hours and staying hours showed correlation effects to PPT scores, HSQ scores, HSQ situations and SNAP-IV scores at least p-value <0.05. Overall, sixty- six percent of caregivers who had consistently and continually practiced PMT in correct techniques and appropriate manners had the most benefits while the rest had limited benefits. **Conclusion:** PMT showed the most immediate benefits and modest benefits in long term up to one year in caregivers who had continually practiced PMT techniques with the correct techniques and appropriate manners. PMT had limited outcomes in families which had depressive primary caregivers, inconsistent parenting style, mal-practicing caregivers, low income, low parent-child activity hours, low parent-child staying hours and low parental education. In terms of child factors, PMT had limited effects in untreated ADHD, adolescent conduct disorder and Pervasive developmental disorder not otherwise specified (PDD NOS) children. *ASEAN Journal of Psychiatry, Vol. 13 (1): January – June 2012: 31-48.*

**Keywords:** Parent Management Training, Northern Thai Parents, Evaluation Study

## **Introduction**

During 1960-1980, there was a shift in addressing children's problem behaviors [1]. This shift was because the DSM II (Diagnostic and Statistical Manual of Mental Disorders II) had been launched. In DSM II, the diagnostic criteria for behavior disorders of childhood and adolescence were proposed for the first time. One of the childhood and adolescent behavior disorders which was classified that might be derived from child rearing was unsocialized aggressive reactions of childhood. This behavior was characterized by overt or covert hostile disobedience, quarrelsomeness, physical and verbal aggressiveness, vengefulness and destructiveness, temper tantrums, solitary stealing, lying and hostile teasing. At the footnote of the criteria, it mentioned that the children who have these behaviors were from the families which parents usually have no consistent parental acceptance and discipline [2]. This statement in the criteria emphasized that parents play an important role to moderate children's delinquent behavior. This was according to study from Farrington & West [3], Patterson [4] and Wahler, Leske, & Roger [5] who reported that family variables could determine antisocial behavior in children. In addition, parents who were trained could change the problem behavior of their own child (Patterson, McNeal, Hawkins & Phelps,[6]; Wahler, Winkle, Peterson, and Morrison [7].

In order to encourage parenting skills, Forehand and McMahon [8] and Patterson et al.[9] introduced extensive and empirically based interventions in parent management training (PMT), which focused on how parents manage and behave the child misbehaviors while encouraging prosocial child behaviors. Since then, their approach has been accepted and implied in multiple settings by independent teams of investigators and has proved beneficial in altering oppositional/defiant behavior and conduct disorders while enhancing prosocial behavior in children at home and in school. Even though parent training programs were developed widely and claimed their successfulness, a recent meta-analysis review [10] reported that behavioral parenting programs (a program that

establishes a shift in social contingencies) and non-behavioral parenting programs (a program that attempts to alter parents' communication patterns and attitudes toward child rearing) had small to moderate effect (effect sizes were 0.42-0.66). For follow-up effects, non-behavioral programs had insufficient information while behavioral programs were small in magnitude. However, the children's behaviors and parental perception demonstrated clinically and statistically significant changes compared to the control group [11]. As the behavior parenting program showed distinct beneficial effects above nonbehavioral parenting program, we used this model in the study.

Parenting programs have different programs emphasizing different contents [12] (e.g. knowledge of typical child development, parenting self-efficacy, communication skills, discipline or behavior management strategies), delivery settings (e.g. clinic-based therapy, community-based group sessions, individual home visits), delivery techniques used to engage parents and teach relevant content (e.g. group discussions, homework assignments, role playing), and types of families served (e.g. children with identified behavior problems, low-income adolescent parents, primiparous mothers). Moreover, the objectives of parent training programs have also extended to the parents who have cognitive development [13], anxiety [14], and physical health [15] issues in their children. However, since there have been limited availability of parenting programs in Thailand, the study will focus only on the program which contains basic concepts of child rearing, which could be adapted or adjusted to every child's age group, and a program that manages externalized behaviors of the children.

In Thailand, parent training programs were introduced around 10 years ago. Most of the programs were developed from the evidence-based parent training manual guides and literatures and added up with expert's opinions and experiences. Even though different parent training practices were developed, there have been a few institutes which have developed a robust parenting manual and a professional training course. Siriraj parenting program is the

one of them. In this study, researchers used the Siriraj parenting program as a prototype to develop a parent training program; this program was robust in terms of short-term effectiveness. Furthermore, its separated sessions are ordered from basic to complicated techniques. Therefore, it is easy for the researcher to modify or adjust the content.

Although PMT has been introduced in Thailand for 10 years, the number of studies of the effectiveness of PMT is limited, especially in terms of its long term effectiveness. Furthermore, there was no study of PMT in Northern part of Thailand which could be a reference for further studies. The study was conducted to examine the effectiveness of parent management training in Northern Thai parents in both the short and the long term and to evaluate parental and environmental factors which contribute and maintain the effectiveness of parenting skills.

### ***Background: Problems in Northern Thai child rearing style***

Although there is no published literature on the problems of child rearing practices in Thailand, my observation as a researcher with 4 years' experience working with Thai parents in Central Thailand and 3 years with northern Thai parents, is that there are some parenting problems which affect children's behaviors. Regardless of the education level which may affect the quality of parenting care, some Northern Thai parenting styles may bring a child toward misbehaviors. Northern Thai parents often see that children's misbehaviors are normal developmental behaviors according to the children's age, which are transient and will disappear when the children grow up. Therefore, they tend to wait and see rather than react to the children's misbehaviors. For example, one mother said that a father allowed a 3-year old daughter to hit him when she was angry and when she tried to stop her daughter, she was blamed by her husband. However, some behaviors need to be shaped before they are too late or turn into bad habits. The pinching and hitting behaviors of the toddlers should be inhibited by caregivers every time when they do these behaviors, otherwise they may learn that they can do these to others.

Furthermore, Northern parents tend to allow more freedom to their children and punish less. For example, one mother said during the weekend she did not see her 9-years old son at all. Her son left the house in the morning and came back in the evening. She did not know where he was or what he did and she couldn't prohibit her son from going out. However, the freedom itself should be counter-balanced with boundaries otherwise the children will lack in discipline and become spoiled. Spoiled children come from families which give them love and freedom but no rules or boundaries to control them. Another issue is Thai parents often have difficulties understanding and supporting their children's emotions. When the parents have to deal with the emotional situations, some of them get angry and upset, some focus only on stopping the situations, some ignore them, some use sarcasm towards their children's behaviors while some have no idea at all how to deal with these situations. One reason that would explain this situation is because Thai people have been taught to limit their emotional expression. For example, a boy would be taught to stop crying by being told 'You are a boy. Stop crying. A boy should be strong and must not cry in front of others. Therefore, when the parents face an emotional situation, they handle it by using their instincts rather than by using their reasoning or giving emotional support to their children. For example, when the child is upset with the school grade report, most of the parents will tell the child 'had you studied as I had told you, you would not be upset today, 'you should have studied more', or 'I would reduce computer time so that you can have more time to study', 'Why did not you pay more attention like your sister did?', etc. Although the parent's intention is to encourage their child to study more, the sarcastic wording without any empathic response may lead to discouragement. This issue has been raised by Thai therapists because they have been faced with the same problem. Furthermore, most of the parents forget to recognize or praise their children's good behaviors. In our culture, parents believe that if the children are praised too much, they will become arrogant. The good behaviors such as doing housework or doing homework are the children's duties. Therefore, in the parent's ideas, there is no need to praise

the children if they are responsible for their regular duties.

Parent management training (PMT) is the intervention in which parents are taught about behavioral shaping techniques in order to change the behavior problems of children and adolescents. Even though, there are many forms of PMT treatments, PMT usually refers to the program where parents and therapist work together. It generally does not include the program where parents and children are seen in the same sessions [16]. PMT may be conducted in individual or group sessions. The group format is more evidence-based than the individual format [11]. PMT comprises of 4 components (1) a conceptual view about how to change social, behavioral and emotional problem; (2) a set of principles and techniques that follow from that conceptual view; (3) development of specific skills in parents through practices, role play, and other active methods of techniques; and (4) integration of assessment and evaluation in treatment and treatment decision making [16]. The first two components are explained by 4 learning theories which are operant learning theory, classical learning theory, social learning theory and cognitive theory bases while the latter two components explain how to apply from the theories to practice.

Operant learning theory is used to explain why misbehaviors of the children are maintained. Children maintain their behavior because they receive reinforcements in response to their behaviors [17]. For example, when the children annoy their parents, the parents would pay attention to them by complaining or blaming them. Although these behaviors seem to cause negative consequences to them, the children learn that they can draw attention from their parents by annoying them. Therefore, training parent to ignore the children's annoying behavior reduced the children's misbehaviors. Classical learning theory is used to explain the causes of the children's behaviors, by paying attention to prior stimuli and controlling them. By controlling them, the children's misbehaviors are reduced [17]. Therefore, PMT will train parents to find the stimuli which caused the

children's behaviors then learn how to effectively control them. Social learning theory is used to explain that children's behaviors are shaped by their surrounding people and environment. Children learn social behaviors by imitating their significant others and superiors, understanding the surrounding contexts and following an idol's behaviors [18]. Therefore, teaching parents to be a good role model is crucial because if the children imitate parent's positive behaviors, their misbehaviors will be reduced.

Cognitive theory is used to explain that children's misbehaviors may come from their parents negative attitudes toward them [17]. Parents whose views are marked by negative attitudes toward their children won't see the positive behaviors, but will easily and immediately recognize the negative behaviors while tending to interpret the children's behaviors pessimistically. When children continuously receive negative reactions from their parents for a long time, they will develop negative attitudes toward themselves and increase their misbehavior. Therefore, training parents to change their negative attitudes toward their children and reconstruct their distorted thoughts and perceptions toward the children's behaviors, while encouraging them to manage their negative thoughts toward their children's behaviors will decrease their biases toward their children's behaviors.

#### ***Northern Thailand's parent management training program***

The Northern Thai Parent Management Training Program was modified from Siriraj Parent Management Training Program which was modified from Dr. James Windell's parenting program guideline book "8 Weeks to a Well-Behaved Child: Putting Discipline Skills to Work" [19]. The Siriraj Parent Training comprises of 8 sessions which are general parenting skills, basic enneagram, communication skills and empathetic skills, praising techniques, giving of rewards and privileges, time-out, withdrawing rewards and privileges, token economy and conclusion session. Northern Thai Parent Management

Training Program has only 7 sessions because the developer skips basic enneagram session since it is not generally contained in a standard PMT program. Furthermore, the lesser number of sessions conducted, the greater the compliance of the participants.

Although contents in some sessions have been reduced, adjusted and developed, the key concepts remain the same.

In the program, therapist and co-therapist will lead each session according to the topic by explaining and giving an example while participants will have a chance to discuss, exchange, and learn new parenting techniques through the focused topics and case studies. Moreover, in each session, participants will be given case studies to discuss in a small group of 3-4 people, act in role plays and receive feedback from other groups and therapists. At the end of each session, participants are given homework which they need to bring back to discuss in a group in the following week. Each session, therapists and co-therapist provide 30 minutes for discussion of the homework in a group before starting the next topic.

In the first 6 weeks, the topics are the same as the Siriraj Parent Training program, except the basic enneagram session is removed. The last session is also different: participants will be given complex case studies in which they need to integrate techniques that they had learnt from all the previous sessions to solve the problems. In order to smoothen the communication, Northern Thai language was used in the entire program.

## **Methods**

All voluntary participants were included by meeting this inclusion criteria which were (i) they were primary carers, (ii) they had children whose age were between 2-15 years old and (iii) they could read and write in Thai.

The PMT was held in the child and adolescent clinic for 7 consecutive weeks with 3-hour sessions each week. Around 20 participants enrolled in each group. The group was conducted as a closed group so a new participant

was not allowed to join after the group had started.

To measure the primary outcome of PMT, participants were asked to fill out a demographic data form, parent practice test questionnaire (PPT), home situation questionnaire (HSQ) and Swanson, the Oppositional defiant disorder (ODD) part in Nolan and Pelham short form (SNAP-IV) questionnaire and were interviewed by therapist, co-therapist and 2 assisted researchers before the program started and a repeat of this was carried out at week 8, week 24 and week 54. For the qualitative part, participants were asked to answer 3 questions after they completed the questionnaires. These three questions were 1. What are the current (within 2 weeks) behavioral problems of your children? 2. How did you manage them? 3. What were the results? All the answers were recorded and transcribed word for word.

The demographic data form which the primary carer needed to fill was divided into three parts. The first part questioned a primary carer's demographic data which included sex, age, relationship to the child, marital status, educational level, occupation and illnesses. The second part was corresponding to the first part but for the spouse of the primary carer. The third part was the family part which included the number of the children in the house, type of family, the number of family members, income, staying hours and activity hours. Staying hour means the total hours per day that parents stay with the children in the same place whereas activity hours count only the amount of times that parents stay and participate in the same activities with the children. In other words, the activity hours means the quality time spent together. The child demographic data included their sexes and ages.

Parent practice test (PPT) was translated from Dr. James Windell's book; 8 Weeks to a Well-Behaved Child: Putting Discipline Skills to Work [19]. It has good internal consistency; Cronbach's Alpha Coefficient of PPT is 0.841 (Chanvit Pornoppadol MD., unpublished). The questionnaire was developed to evaluate the effectiveness of parent management training



program by relying on parent self-report on how well parents interact or manage their children's behaviors. It has 20 items. Likert scale is used for each item where 0= never, 1= sometime to 2=often. Parents were asked to rate the score which was corresponding to their present situations within the past 2 weeks such as 'parents conduct a clear and certain house rule,' 'parents have consistently responded to the child's behavior,' 'parents praise or talk about good behavior of the child more than once a day'. The scores range from 0 to 40 where the higher scores represent better parenting practice. Home Situation Questionnaire (HSQ) was developed and tested normative data, reliability, and validity by G. J. DuPaul, 1990 unpublished manuscript, University of Massachusetts Medical Center, Worcester [20]. This questionnaire has a free downloaded version. The questionnaire was translated into Thai language. The HSQ Thai version has good internal consistency; Cronbach's Alpha Coefficient of HSQ is 0.910 (NuttornPittayratsatien MD, unpublished). The objective of the questionnaire is to evaluate the children's behaviors and severity of their behaviors in different situations at home. The HSQ assesses the children in these situations at home such as 'while playing alone', 'while playing with other children', 'at mealtimes', 'while getting dressed', 'when asked to do chores at home'). The questionnaire has 16 items. Each item is rated on this behavior is 'present' or 'absent' in each situation and if 'present', how severe is this behavior. Parents rate which one is corresponding to their situation within past 2 weeks. If parents mark 'present', they need to rate the severity of the children's behavior based on a 9-point scale where minimal number represent less severity. The 16 items are compiled as home situations and summed up as home situation scores. The home situations range from 0-16 while the home situation scores range from 0 to 144. The higher number of situations and the higher scores represent worse home situation.

***Oppositional defiant disorder part (ODD) in Swanson, Nolan and Pelham (SNAP-IV) questionnaire***

The SNAP-IV was developed by Swanson M. James, Ph.D., University of California, Irvine, CA. The original version contains 90 items whereas the SNAP-IV short form [21] which was used in many studies to access and follow-up children's behaviors such as in Multimodal Treatment Study for ADHD (MTA; [22],[23],[24]) and also in genetic studies [25],[26] has 26 items. This questionnaire combines ADHD (Attention Deficit hyperactivity disorder) and ODD (oppositional defiant disorder) subscale where rating indices are constructed for inattentive, hyperactive/impulsive, combined ADHD, and ODD subscales. The scores above the 95th percentile are labeled clinically relevant. This short form questionnaire was translated to Thai. The SNAP-IV Thai version has a good internal consistency; Cronbach's Alpha Coefficient of SNAP-IV is 0.927 (Nuttorn Pittayratsatien MD., unpublished). However, since this questionnaire has two separate parts which can be used separately to access ADHD and ODD, in this research, we decided to use only ODD part because researcher paid attention to the defiant behaviors of the children rather than ADHD symptoms. The SNAP-IV short form ODD part has 8 items which was adapted from DSM-IV diagnostic criteria for ODD such as 'often loses temper', 'often argues with adults', 'often actively defies or refuses to comply with adults' requests or rules', 'often deliberately annoys people'. Parents rate which one corresponds to their children's current behaviors. Each question is rated based on a 4-point scale from (0) not at all to (3) very much. The 8 items are summed to yield an ODD score ranging from 0 to 24 where higher score indicates severe symptoms and if the score is higher than 95th percentile of the child's age, it is clinically significant.

The SPSS program version 14 was used for statistical calculation. One pair t-test, paired t-test, one way ANOVA and correlation were used to compare the difference of the means, as well as determine the factors associated with the effectiveness of PMT, respectively.

Participants were classified into 4 groups by using the norm and cut-off points of each questionnaire. Post intervention scores from

each questionnaire were used to classify participants into a group while the transcribed interview of each participant was used for qualitative analysis.

## **Results**

Forty-one females were enrolled. Thirty-seven were mothers while three of them were aunts. Majority of them were around 35-44 years old, employed and had at least a bachelor's degree. More than half of the participants were in a nuclear family which had less than 5 family members. Ninety percent of the providers had 1 to 2 children to care for. Seventy-five percent have their income around 20000-100000 baht

per month which meant that they were middle to high class families. Seventy-five percent had 2 to 12 stay hours with their children and sixty-five percent of them had one to more than three activity hours with their children. More than half of them joined more than eighty percent of all sessions.

Sixty-four children were evaluated by their providers. Sixty percent were females. Almost half were six to ten years old while a third was eleven to fifteen years old and a fifth was two to five years old. The data is showed in table 1. Fortunately, 41 participants completed the questionnaires and interviews throughout the 1-year research process.

**Table 1. Caregiver demographic data**

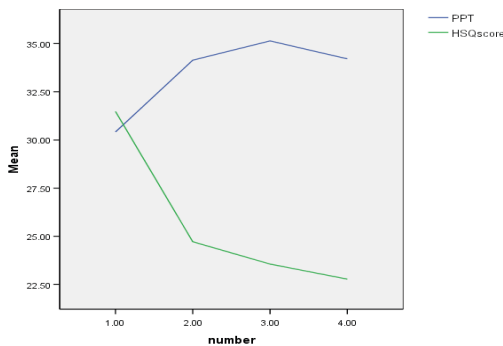
Variables	Frequency	Percent	cumulative percent
1. Sex Female	41	100	100
2. Age 25-34 35-44 45-54 Total	8 28 5 41	19.5 68.3 12.2 100.0	19.5 87.8 100.0
3. Relationship Parent Uncle-aunt Total	39 2 41	95.1 4.9 100.0	95.1 100.0
4. Marital status Married Widow Separate Single Total	36 1 1 3 41	87.8 2.4 2.4 7.3 100.0	87.8 90.2 92.7 100.0
5. Occupation Governmental/bank/state officers Enterprise employee Own business Other Total	27 12 1 1 41	65.9 39.3 2.4 2.4 100.0	65.9 95.1 97.6 100.0
6. Education High school BA MA Total	8 30 3 41	19.5 73.2 7.3 100.0	19.5 92.7 100.0
7. Chronic sickness None Cases Total	32 9 41	78 22 100.0	78 100.0
8. Spouse's age 25-34 35-44 45-54 Missing data total	8 21 8 4 41	19.5 51.2 19.5 9.8 100.0	19.5 70.7 90.2 100.0
9. Occupation's spouse Governmental/bank/state officers Enterprise employee Own business Missing data Total	20 11 6 4 41	48.8 26.8 14.6 9.8 100.0	48.8 75.6 90.2 100.0
10. Education's spouse Secondary school High school Higher vocation diploma Bachelor degree Master degree Missing data Total	2 8 3 17 7 4 41	4.9 19.5 7.3 41.5 17 9.8 100.0	4.9 24.4 31.7 73.2 90.2 100.0

**Table 1. Continued.**

11. Chronic sickness of spouse			
Negative	33	80.5	80.5
Positive	4	9.75	90.25
Missing data	4	9.75	
Total	41	100.0	100.0
12. Type of family			
Nuclear	24	58.5	58.5
Extended	17	41.5	100.0
Total	41	100.0	
13. Have kids			
1	10	24.4	24.4
2	28	68.3	92.7
3	3	7.3	100.0
Total	41	100.0	
14. Family number			
2	1	2.4	2.4
3	4	9.8	12.2
4	12	29.3	41.5
5	12	29.3	70.7
6	7	17.1	87.8
7	4	9.8	97.6
8	1	2.4	100.0
Total	41	100.0	
15. Income (bath)			
<3000	1	2.4	2.4
3001-8000	4	9.8	12.2
8001-20000	5	12.2	24.4
20001-50000	15	36.6	61.0
50001-100000	15	36.6	97.6
>100000	1	2.4	100.0
Total	41	100.0	
16. Staying hours/ day			
2-6	20	48.8	48.8
6-12	11	26.8	75.6
>12	7	17.1	92.7
Missing data	3	7.3	100.0
Total	41	100.0	
17. Activity hours/week			
0-2 hr/wk	1	2.4	2.4
>2-6hr/wk	12	29.3	31.7
1hr/day	2	4.9	36.6
>1-3hr/day	11	26.8	63.4
>3hr/day	14	34.2	97.8
Missing	1	2.4	100.0
Total	41	100.0	
18. Seminar times(joining parenting class)			
3	4	9.8	9.8
4	2	4.9	14.6
5	9	22	36.6
6	7	17.1	53.7
7	19	46.3	100.0
Total	41	100.0	

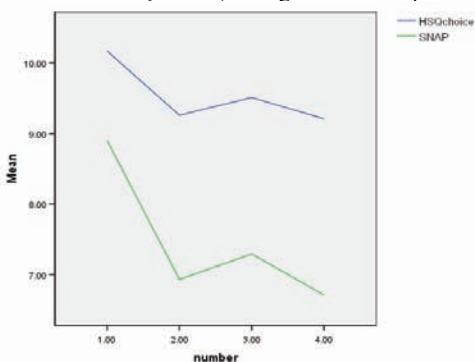
Behavior outcomes from 3 questionnaires were divided into 4 parts. The first part, PPT scores measured parenting skills outcome while the second to the fourth part were HSQ scores, HSQ situations and SNAPIV scores which measured troublesome home situations and scores and the children's disruptive behaviors, respectively. The means of PPT scores showed statistically significant increase in each follow up. It was 30.54 at baseline, then reached to 34.31, 35.37 and 34.46 at week 8, week 24 and week 54 respectively. All of them had statistically significant difference from the baseline with  $p\text{-value} < 0.001$ . HSQ scores showed significant decrease from 33.03 at baseline to 24.52, 23.73

and 22 at week 8, week 24 and week 54 respectively. All of them had statistically significant difference from the baseline with  $p\text{-value} < 0.001$ . These two scores were demonstrated in figure 1. Figure 2 demonstrated HSQ situations and SNAPIV scores. Both of the scores showed statistically significant decreased mean scores from the baseline in each follow-up with  $p\text{-value} < 0.001$ . HSQ situation means decreased from 10.32 at baseline to 8.65, 9.59 and 8.92 at week 8, week 24 and week 54 respectively. Meanwhile, the means of SNAPIV scores decreased from 8.9 at baseline to 6.93, 7.29 and 6.71 at week 8, week 24 and week 54 respectively.



**Figure 1. Demonstrating PPT and HSQscores prior to the intervention and follow up at 8<sup>th</sup> wk, 24<sup>th</sup> wk and 54<sup>th</sup> wk**

Blue line- PPT score (the higher scores represent better practice)  
Green line –HSQ score (the higher scores represent severity of home situation)



**Figure 2. Demonstrating HSQ choices and SNAPIV prior to the intervention and follow up at 8<sup>th</sup> wk, 24<sup>th</sup> wk and 54<sup>th</sup> wk**

Blue line- HSQ choice (the higher scores represent more problems)  
Green line- SNAP score (the higher scores represent severity of ODD)

Table 2 showed the correlation of parenting skills (PPT), child's disruptive behavior (SNAP-IV) and troublesome home situations (HSQ situations and HSQ scores) to parental factors and children's factors. Only final follow-up scores of PPT, HSQ situation, HSQ and SNAP IV were analysed to demonstrate the factors which could maintain the long term effect (1-year) of PMT. The parental and child factors which correlated to the parenting skills outcome (PPT), child's disruptive behavior outcomes (SNAP-IV) and troublesome home situations outcomes (HSQ situations and HSQ scores) were sex of the children, family income, educational level of the caregivers, activity hour and staying hour. Sex of the children, family

income, educational level of the caregivers and activity hours had low to moderate relationship with parenting skills outcome (PPT) with Pearson correlation coefficient,  $r = 0.384$ ,  $0.458$  and  $0.446$ , respectively,  $p < 0.01$ . Activity hours had moderate relationship with HSQ troublesome situations (HSQch) with Pearson correlation coefficient,  $r = 0.559$ ,  $p < 0.05$  while stay hours had fairly low relationship with HSQ situations, HSQ score and SNAP IV scores with correlation  $r = -0.327$ ,  $-0.329$  and  $-0.281$  respectively,  $p < 0.05$ . Family income had strong relationship with educational level of caregiver ( $r = 0.616$ ,  $p < 0.01$ ) and moderate relationship with activity hours ( $r = 0.431$ ,  $p < 0.01$ ).

**Table 2. Correlation of parenting skills (PPT), child's disruptive behavior (SNAP-IV) and troublesome home situations (HSQ situations and HSQ scores) to parental factors and children's factors.**

	Sex	Income	Educare giver	Activity hour	Stay hour	PPT	HSQch	HSQ
Income	0.147							
Educare giver	0.181	0.616(**)						
Activity hour	-0.030	0.431(**)	0.504(**)					
Stay hour	0.034	0.116	0.080	.559(**)				
PPT last	0.384(**)	0.458(**)	0.446(**)	.351(**)	.088			
HSQ chlast	-0.116	-0.169	0.067	-.238	-.327(*)	-.245		
HSQ last	-0.131	-0.200	0.062	-.171	-.329(*)	-.296(*)	.695(**)	
SNAP last	-0.094	0.027	0.064	-.229	-.281(*)	-.033	.437(**)	.425(**)

\*\* Correlation is significant at the 0.01 level (2-tailed).

[Educare giver = educational level of the caregivers]

\* Correlation is significant at the 0.05 level (2-tailed).

From the post intervention scores of each primary caregiver, care givers were analyzed by classifying them into 4 groups. The first group had the best results which included care givers who rated high PPT scores ( high parenting skill outcome) with low HSQ situations, low HSQ scores and low SNAP IV scores (low child's disruptive behavior outcomes). The second group which included caregivers who rated high PPT scores (high parenting skills outcome) but high HSQ situations, high HSQ scores and high SNAP IV scores (high child's disruptive behavior outcomes) demonstrated conflict between high parent practice scores but had poor

children's behaviors outcome. The third group showed the worst results which included care givers who rated low PPT scores (low parenting skill outcomes) with high HSQ situations, high HSQ scores and high SNAP IV scores (high child's disruptive behavior outcomes). The last group which included carers who rated low PPT scores (low parenting skills outcome)but low HSQ situations, low HSQ scores and low SNAP IV scores (low child's disruptive behavior outcomes)demonstrated the conflict between poor parent practice scores but had good children's behaviors outcomes. These categories are demonstrated in table 3.

Table 3 categories of parenting skills vs. children's misbehaviors and troublesome home situations

Group	Parenting skills	Children's misbehaviors and troublesome Home situations
1.	high	low
2.	high	high
3.	low	high
4.	low	low

Sixty-six percent of care givers were in group 1. Care givers who were in the first group shaped their children in accordance with PMT patterns with correct techniques and appropriate manners. They reported that PMT techniques which they had used were still effective, even at 1 year. Techniques that they had used were communication and empathetic skills, praising techniques, giving of rewards and privileges and time-out, withdrawing rewards and privileges. For example, one care giver said that she trained her 5 years old child to stop teasing her sister while her sister was doing her homework by creating a rule that "she won't be allowed to tease her sister while her sister is doing homework and if she cooperates well, she will get a star". Her stars will be collected and then exchanged for a reward which had been agreed in advance. Another care giver reported that she helped her 10 years old girl who was ambitious while she was anxious about her test result. She said she used empathic listening, reflected her child emotions and explained to her such as "I saw that you looked unhappy after the test", "Could you tell me what has happened to you?" "I understand that you were worried about your exam and I saw that you had taken it seriously for many days but I'd like to remind you that no one is perfect in everything, right?",... etc.

Fourteen percent of care providers fell into the second group. Care givers who were in the second group said that they had followed PMT techniques by creating the rules, giving

privileges or rewards to the children and withdrawing the rewards techniques but their children behaved only a little better. The interview revealed that three care givers had ADHD children who had been treated by a child psychiatrist. One of the three who had ADHD had inadequate treatment because her child often forgot to take his medicine while one of them had a hot tempered caregiver who was inconsistent and impatient in creating the rules and rewarding her child's behavior. Four care givers in this group reported that they suspected that their children might have ADHD but hadn't been diagnosed yet. Other caregiver reported that she had little success because when she used PMT techniques to deal with her children's behaviors, her husband who is a guidance teacher and believed in harsh punishment disagreed. She could only use PMT techniques when her husband was going out. Three of them reported that star charts that they used didn't show effective results. However, in the interviews we found that one of them irregularly gave the scores to the children while two of them misunderstood about the star chart and they used the star chart in inappropriate situations such as to negotiate the children when they misbehaved.

Fifteen percent of carers were in group 3. Care givers in this group had poorest outcomes because they had low PPT scores, had high troubled home situations (high HSQ situations

and high HSQ scores) and had poor SNAP IV scores. One of the care givers in this group had depression and was continuing her treatment with a psychiatrist. Moreover, from the interview, although a depressed mother reported that she did sometimes praise her children, she couldn't give an interviewer a relevant example or clarify the situations which showed that she did it correctly. Although her manners were doubted about their correctness, her children's behaviors showed a little improvement in their scores. One of them had a 13 year-old boy with conduct disorder, and a 7 years old boy with ADHD with LD (learning disorder). This mother said that she could control some behaviors of the child with ADHD, such as creating a rule or a contract with her child. But it didn't work well with her adolescent's conduct. Finally, she gave up with her adolescent. One of the caregivers in this group had an abusive and hot tempered husband who frequently had harsh argument with her and didn't get along well with his children. Therefore, she couldn't create any rules in the house and didn't receive any cooperation from her husband. One of them had a PDD NOS (Pervasive developmental disorder not otherwise specified) child. Parent reported that she tried to use PMT's rewarding system to reduce her son's obsession with exactness and symmetry. However, she said that she had to give up because she did not see any changes. Two of them who reported less satisfaction said that PMT techniques were ineffective. One of these two reported that her 6 years old boy still needed her to feed and dress at home, even though, he did help himself at school. She said that she gave him a score to encourage him to do these behaviors. However, it showed effective outcomes only for a few days. After that he didn't cooperate. Then he got minus scores more than positive scores. Thus, she had to complain and be sarcastic to him about his behaviors every day by saying "You are a big boy now. Why don't you behave like a baby?". But it did not matter to him. Finally she said that she and her mother needed to help him feed or dress every time that he called. Otherwise she said "we were all stressed". Another one reported that she couldn't follow the rules which she and her child had committed to because if she had to time-out the child, a grandmother

would get involved and ruin her rules. Consequently, they gave up.

Five percent of care givers were in group 4. Care givers in this group reported that even though they had poor PMT scores, the troublesome home situations (HSQ situations and HSQ scores) and child misbehaviors (SNAP-IV score) were low. One of two people in this group reported that she didn't see her 3 years old child's behaviors as a problem. She thought that the behaviors of her child were normal and if they were problems, she thought that they will remit or be reduced when the child is growing up. Moreover, she thought that her son was too young for applying PMT techniques on him. She mentioned that her child didn't understand the contracts when she set a star chart for him. Another one said that both of her children were well-behaved, even when "she did nothing". She reported that both of her children had never quarreled or fought. Her older son always took care of his younger brother. Moreover, when they had a conflict, the older child would comply with his younger brother.

## **Discussion**

In this study, PMT technique significantly increased parenting skills and decreased troublesome home situations and children's disruptive behaviors up to one year. This conclusion was concordant with a meta-analysis of parent training of Lundahl [11] and Kaminski [27] that in general, parent training designed to modify disruptive child behavior is a robust intervention. It produced effect sizes in the moderate range in immediately following treatment while, up to 1 year the effects were small in magnitude. However, the effects remained meaningful compared to the control groups.

Factors that correlated in maintaining PMT outcomes in 1- year were sex of child, family income, primary care giver education, caregiver-child activity hours and caregiver-child staying hours. Family income's relationship with parenting skills was supported by Dix [28] and Ispa et al., [29] that lowly educated parents accompanied by poverty may lead to an overly



controlling style of interaction with children. While Tamis-LeMonda, Shannon, Cabrera, & Lamb, [30] concluded that the mothers with higher education achieved greater maternal sensitivity and less control. Furthermore, Linver, Grooks-Gunn, & Kohen, [31]; Mistry, Vandewater, Huston, & McLoyd, [32]; Mistry, Biesanz, Taylor, Burchinal, & Cox, [33]; Yeung, Linver, & Brooks-Gunn, [34] concluded that family income was an interesting factor because it affected parental stress and aspects of parent behavior such as harsh discipline or warmth. Another one is the time that caregivers spent with the children. This was supported by Sanders et al., [35] that the strategies for improving parent-child relationships were spending quality time with children including talking with children and showing affection. Furthermore, from the result we could see that education level was correlated with income and activity time. This relation was confirmed from the interview that caregivers, who had less income needed to do more overtime or extra jobs which therefore, decreased parent-child activity time. In other words, parents who had high income had more time with the children. Since activity time correlated with PPT score, decreased parent-child time related to limited parenting outcomes from PMT.

From the qualitative analysis, parents who practiced PMT techniques in correctly and in appropriate situations had the most benefit compared to those who did incorrectly or those who didn't practice it. Parents who had less benefit may be because of (1) child's factors; untreated ADHD. This was according to MTA study [23] which reported that behavioral therapy (parent, school, and child components, with therapist involvement) alone could not reduce the core symptoms such as fidget, hyperactive, irritability. Behavioral therapy provided modest advantages for non-ADHD symptoms. The best results were the group with combined therapy which was medication plus intensive behavioral treatment. Thus if the children whom their caregiver suspected to have ADHD or they were on appropriate ADHD treatment, their troublesome home situations and their defiant behavior outcomes might be improved. For a PDD child, since a child with

PDD NOS needs other specific behavior treatments for them such as ABA (applied behavior analysis) to improve their behaviors [36] rather than PMT alone, a caregiver with PDD NOS child in this study reported little effect from PMT. (2) Caregiver factors; non-cooperating care givers were other factors that led to failure to apply PMT techniques. A rule which was set by one care giver would be ruined by another care giver who disagreed with the rule. This was supported by a study by Ernest N. Jouriles et al. [37] that child rearing disagreement correlated with a greater variety of behavioral problems of the child than non-disagreement child rearing. The other factor that effects PMT skills was the depressed caregiver. Study from Goodman and Gotlib [38], Cicchetti and Toth [39] and Patterson et al. [40] reported that parental depressive disorder affected child rearing and parenting skills. Moreover, depressive disorder itself might impair cognitive function of patients and interrupt learning process [41]. Therefore, in this study, depressed caregiver may not learn and practice PMT techniques well.

This study showed that majority of PMT participants had impressive outcomes. This conclusion contrasted meta-analysis results from Lundahl [11] and Kaminski [27] which concluded that PMT had small to modest results and was least effective in economically disadvantaged families. It was more successful because majority of participants in this study were educated and were in middle to high class status. With high education level, they may be assumed that they have high learning ability to new techniques. This summary was concordant with Lundahl [11] who said that PMT had more advantages in family with high educational parents and high income. Furthermore, as discussed above, high income correlated with high activity hours so caregivers who are educated would have more time to practice parenting skills which they had learnt with their children. Thus it resulted in a good outcome. However, participants in this study did not represent the Northern Thai parent-population. Therefore, conducting a community based PMT group would demonstrate the effectiveness of

PMT in Northern Thai parents better than in a clinic.

## Conclusion

PMT showed the immediate benefits and long term benefits up to one year in caregivers who continued to practice PMT techniques correctly and appropriately. PMT had limited outcomes in families who had depressive disorder in the primary caregiver, disagreeing parenting style, low income, low parent-child activity hours, low parent-child staying hours and low parental education. In terms of child factors, PMT had limited effectiveness in families with untreated ADHD, adolescent conduct disorder and children with PDD NOS. Since the participants in this group might not represent Northern Thai parents, a community based group is suggested.

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**Corresponding author:** *Wachiraporn Arunothong, M.D., Child and Adolescent Psychiatrist, Lampang General Hospital, 2 Prabat Muang Lampang, 52000 Thailand.*

**Email:** wachira\_arun@lph.go.th

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ORIGINAL ARTICLE

**STABILITY OF USMEQ-i IN MEASURING EMOTIONAL INTELLIGENCE IN MEDICAL STUDENTS**

*Muhamad Saiful Bahri Yusoff\**

**\*Medical Education Department, School of Medical Sciences, Universiti Sains  
Malaysia, Kubang Kerian, 16150 Kota Bharu, Kelantan, Malaysia.**

**Abstract**

**Objective:** Emotional Intelligence (EI) is described as the ability to perceive, express, understand, motivate, control and regulate emotion. The USM Emotional Quotient Inventory (USMEQ-i) was designed to measure EI and it was found to be a reliable and valid tool in a sample of prospective medical students. The objective of this study is to determine stability of the USMEQ-i to measure EI at different time and occasions. **Methods:** A prospective cohort study was done on 196 first year medical students. It was administered to the medical students at four different intervals. The Cronbach's alpha and intra-class correlation analysis were applied to measure the internal consistency and agreement level across the intervals. The analysis was done using Statistical Package for Social Sciences (SPSS) version 18. **Results:** A total of 196 first year medical students participated in this study. Its overall Cronbach's alpha value across intervals ranged between 0.94 and 0.97. The Cronbach's alpha values of emotional control, emotional maturity, emotional conscientiousness, emotional awareness, emotional commitment, emotional fortitude, and emotional expression scale ranged between 0.59 and 0.91. The Cronbach's alpha value for the faking index scale ranged from 0.76 to 0.89. The ICC coefficient values for EI total score was 0.83, EI domain score ranged between 0.62 and 0.76 and the faking index score was 0.76. **Conclusion:** The USMEQ-i has demonstrated a good level of stability and internal consistency to measure EI at different time and occasions. It is a promising psychometric instrument that can be used to measure EI. *ASEAN Journal of Psychiatry, Vol. 13 (1): January – June 2012: 49-54.*

**Keywords:** Stability, Reliability, Emotional Intelligence, USMEQ-i

**Introduction**

Emotional Intelligence (EI) is described as the ability to perceive, express, understand, motivate, control and regulate emotion [1-4]. Emotionally intelligent people are self-aware, able to control their emotions well from overwhelming stress, depression, anxiety, or anger and delay their enjoyment in pursuit of long-term rewards, rather than being overhauled by immediate desires [1, 4-6]. There are three theory approaches to EI which include i) the

specific ability approach, ii) the integrative approach, and iii) the mixed model approach [3]. The specific ability approach of EI focuses mainly on specific skill areas that can be considered as basic to EI [3]. The integrative approach of EI focuses on how multiple relevant specific abilities join together so as to obtain an overall sense of EI as an integrated group [3]. The mixed-model approach of EI focuses on mixed where it uses very broad definitions of emotional intelligence that include non-cognitive capability, competency or skill and/or

emotional and socially intelligence behaviour and take account of disposition from the personality domain [3]. It consists of diverse psychological traits, abilities, styles and other characteristics to EI [3].

A number of studies reported that reliability of the EI inventories range from 0.80 to 0.92, which is adequate for research and assessment of an individual [3]. A number of studies suggest that measures of EI do form a coherent, recognizable factor structure and thus an evidence of validity. Intelligence researchers have long found that higher IQ participants are able to solve problems with less brain activity than those with lower IQ. Applying the same concept, researchers have found that those with a higher EI exert less brain activity to solve emotional problems, as indicated by brain wave activity [7, 8]. Studies have shown that there is poor correlation between EI and cognitive functions [3]. There are considerable evidences showing that emotional intelligence is a determinant of success in a variety of occupational settings [3, 9, 10]. Although they vary widely in their quality, they include a number of well-done and convincing demonstrations of the predictive power of EI. EI validly measured, is a predictor of significant outcomes across diverse samples in a number of real world domains. It predicts social relations, workplace performance, mental and physical well-being [3].

Reliability refers to consistency or reproducibility of a measurement over time or occasions and it is gauged in the form of internal consistency and stability [11]; without consistency and stability, measurement is compromised. The internal consistency is measured by various ways such as Cronbach's alpha, Kuder-Richardson and split halves. Stability is measured by the degree of agreement between observations based on multiple administrations in the form of inter-rater reliability, intra-rater reliability and test-retest reliability [11]. The internal consistency of the Universiti Sains Malaysia Emotional Quotient Inventory (USMEQ-i) was established in a sample of prospective medical students [6]. The Cronbach's alpha values for the seven EI

dimensions (i.e. emotional control, emotional maturity, emotional conscientiousness, emotional awareness, emotional commitment, emotional fortitude and emotional expression) ranged between 0.6 and 0.9, the alpha value was 0.96 for overall score of USMEQ-i and for the faking index domain was 0.83 (6). These findings demonstrated that it had a good level of internal consistency. Even so, none of articles reported the stability of the USMEQ-i in measuring EI at multiple administrations. It is worth mentioning that stability is one of important qualities that any instruments to be tested must have to ensure the measurement obtained is reproducible over time and occasion.

This study was designed to answer three questions: 1) What is the internal consistency of the USMEQ-i over multiple administrations? 2) What is the internal consistency of EI scales over multiple administrations? 3) What is the degree of agreement between measurements of EI scales over multiple administrations? The author hypothesized that the USMEQ-i would demonstrate good level of stability and internal consistency in measuring EI over multiple administrations. This study will provide stability evidence of the USMEQ-i to measure EI across time and occasions.

## **Methods**

A prospective study was conducted on first year medical students in a Malaysian public medical school. Purposive sampling method was applied and a total of 196 medical students were selected. They were then followed up at four intervals. The researcher had obtained permission from the School of Medical Sciences and Human Ethical Committee of Universiti Sains Malaysia prior to the start of the study.

## **Collection of data**

The USMEQ-i was administered at four time intervals: 2 months (time 1), 4 months (time 2), 6 months (time 3) and 8 months (time 4) of the first year medical training. Proper instructions were given before the administration of the inventory. Informed consent was obtained from the respondents and they were asked to respond

to all statements completely. Completion of the inventory was voluntary and they were informed that not returning the inventory would not affect their progress in the medical course. Data was collected by guided self-administered questionnaire during face-to-face sessions in a hall. The questionnaires were immediately returned after they were completed. Data was analysed using the Statistical Package for Social Sciences (SPSS) version 18.

### **The Universiti Sains Malaysia Emotional Quotient Inventory (USMEQ-i)**

It was originally developed in Malay language based on the mixed model approach of EI and grouped into seven scales which are emotional control (*pengawalan emosi*), emotional maturity (*kematangan emosi*), emotional conscientiousness (*kehematan emosi*), emotional awareness (*kepekaan emosi*), emotional commitment (*komitmen emosi*), emotional fortitude (*keanjalan emosi*) and emotional expression (*ekspresi emosi*) (5, 6). A Faking Index domain was designed and included in the USMEQ-i to measure tendency of respondents to over-rate themselves. It consists of 39 statements representing the emotional intelligence dimensions and 7 statements representing the faking index domain. Each statement was rated under 5 categories of responses which are ‘not like me’ (*tidak sama seperti saya*), ‘a bit like me’ (*sedikit sama seperti saya*), ‘quite like me’ (*hampir sama seperti saya*), ‘a lot like me’ (*sama seperti saya*),

and ‘totally like me’ (*sangat sama seperti saya*), to indicate how close the statement describes respondents’ behaviour (5).

### **Stability analysis**

Reliability analysis was applied to determine the internal consistency of the USMEQ-i. Internal consistency of its items was measured using the Cronbach’s alpha coefficient. The items were considered to represent an acceptable level of internal consistency if the Cronbach’s alpha value within 0.5 to 0.7 and good level if the Cronbach’s alpha value more than 0.7 [11, 12].

Intra-class correlation (ICC) analysis was done to determine level of agreement between measurements at four different intervals. The agreement level was represented as ICC coefficient. The ICC coefficient value less than 0.2 was considered as poor agreement, 0.21 to 0.40 was considered as fair agreement, 0.41 to 0.60 was considered as moderate agreement, 0.61 to 0.80 was considered as good agreement and 0.81 to 1.0 was considered as very good agreement [11, 13].

### **Results**

A total of 196 (100%) applicants responded to this study. Majority of the respondents were female (65.3%), Malay (53.6%) and came from the matriculation stream (88.8%) as shown in Table 1.

**Table 1. Demographic profile of participants.**

Variable		Frequency (%), (N=196)
Gender	Male	68 (34.7)
	Female	128 (65.3)
Race	Malay	105 (53.6)
	Chinese	61 (31.1)
	Indian	22 (11.2)
	Others	8 (3.6)
Entry qualification	Matriculation	174 (88.8)
	HSC	13 (6.6)
	A-level	9 (4.6)



**Table 2. Internal consistency and ICC coefficient values across measurements taken at four different intervals.**

EQ domain (number of item)	Cronbach's Alpha value					ICC coefficient <sup>a</sup>
	Yusoff et al., 2011	Time 1 (n = 196)	Time 2 (n = 196)	Time 3 (n=196)	Time 4 (n=196)	
<b>Emotional Control (9)</b>	0.90	0.86	0.90	0.91	0.91	0.74**
<b>Emotional Maturity (8)</b>	0.82	0.85	0.86	0.87	0.91	0.74**
<b>Emotional Conscientiousness (5)</b>	0.83	0.80	0.83	0.85	0.86	0.75**
<b>Emotional Awareness (5)</b>	0.79	0.74	0.80	0.83	0.83	0.70**
<b>Emotional Commitment (4)</b>	0.77	0.59	0.77	0.69	0.75	0.67**
<b>Emotional Fortitude (4)</b>	0.66	0.63	0.72	0.70	0.72	0.76**
<b>Emotional Expression (4)</b>	0.60	0.64	0.65	0.72	0.75	0.62**
<b>Total EI score (39)</b>	0.96	0.94	0.96	0.96	0.97	0.83**
<b>Faking Index (7)</b>	0.83	0.76	0.86	0.86	0.89	0.76**

<sup>a</sup> ICC analysis (single measure) between 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> & 4<sup>th</sup> administration

\*\* p < 0.001

Reliability analysis (Table 2) showed that the total Cronbach's alpha value of the USMEQ-i at different intervals ranged between 0.94 and 0.97, indicating good level of internal consistency over time and occasions. The Cronbach's alpha value for emotional control scale ranged between 0.86 and 0.91, indicating good level of internal consistency over different measurements. The Cronbach's alpha value for emotional maturity scale ranged between 0.85 and 0.91, indicating good level of internal consistency across the intervals. The Cronbach's alpha value for emotional conscientiousness scale ranged between 0.80 and 0.86, indicating good level of internal consistency across measurements. The Cronbach's alpha value for emotional awareness scale ranged between 0.74 and 0.83, indicating internal consistency levels are stable over time and occasions. The Cronbach's alpha value for emotional commitment scale ranged between 0.59 and 0.79, indicating acceptable to good level of internal consistency across measurements. The Cronbach's alpha value for emotional fortitude scale ranged between 0.63 and 0.73, indicating acceptable to good level of internal consistency across measurements. The Cronbach's alpha value for emotional expression scale ranged between 0.64 and 0.75, indicating acceptable to good level of internal consistency over measurements. The Cronbach's alpha value for faking index scale ranged between 0.76 and 0.89, indicating good level of internal consistency across measurements.

ICC analysis (Table 2) showed that ICC coefficient values for the seven EI scales ranged from 0.62 and 0.76, indicating good level of agreement between the four different measurements. The ICC coefficient value for the total EI score was 0.83, indicating very good level of agreement between different measurements. The ICC coefficient value for the faking index score was 0.76, indicating good level of agreement between measurements.

## Discussion

In general, our data found that USMEQ-i demonstrated a high level of internal consistency over multiple administrations that were done at different time and occasions as the Cronbach's alpha value more than 0.7 [11,12]. This indicated that USMEQ-i had a good level of internal stability over multiple measurements that were done at different time and occasions. On top of that, our finding was similar with a previous study that reported the overall Cronbach's alpha value was 0.96 [6]. Our finding is comparable with a number of other studies which reported reliability of the emotional intelligence inventories ranging from 0.80 to 0.92, which is adequate for research and assessment of an individual [3]. Our data showed that USMEQ-i is a stable tool to measure EI across multiple measurements. Our data also demonstrated that the EI scales had a good level of internal consistency across multiple administrations. This finding suggested

that they had a stable internal consistency across occasions and time; it reflected the reproducibility of a measurement over time and occasions [11]. In addition, this finding is in keeping with previous study findings found that the Cronbach's alpha values of the EI scales ranged from 0.60 to 0.90 [6] and comparable with other studies which reported reliability of the emotional intelligence inventories ranging from 0.80 to 0.92 [3]. These findings provided evidence to support the stability of internal consistency of the EI scales in measuring EI of medical students.

On further analysis, the EI scales showed a good level of agreement between measurements that were done at different time and occasions as the ICC coefficient values ranged from 0.62 and 0.76. This reflected good degree of agreement between the EI scales' measurements over multiple administrations across time and occasions. In other words, they were able to produce similar results for similar individuals over time and occasions. One implication of this finding was that the tendency for respondents to cheat or fake their responses to the items representing EI dimensions was low. Logically, if respondents were cheating, the degree of agreement between measurements at different time and occasions would be very low, but our findings showed good level of agreement across multiple administrations. These findings clearly demonstrated that the EI scales have a good level of stability to measure EI over time and occasions. In addition, the total EI score and the faking index score showed good level of agreement, indicating they had stable internal consistency in measuring intended constructs.

The reliability analysis has provided evidence of stability and internal consistency of the USMEQ-i in measuring EI of medical students. Despite of these encouraging findings, this study has several limitations that should be considered for future research as well as for interpretation. Firstly, this study was confined to first year medical students at a medical school, thus, interpretation of the study findings should be made with caution. A multi-centre validation study should be conducted in future to verify validity and reliability of the USMEQ-i across

medical school settings. Secondly, this study had selected subjects based on non-probability sampling method, therefore sampling bias might compromise the accuracy of the current findings. Therefore, a probability sampling method should be applied in future research to minimise the sampling bias as well as to verify this study findings. Interpretation and any attempt to generalise the result should be done with caution. However, this is the first study that reported the stability of the USMEQ-i based on more than three measurements at different time and occasion with two months gap. Further research is required to optimise the usefulness and applicability of this inventory to measure EI in different educational settings.

## **Conclusion**

The USMEQ-i had demonstrated a good level of stability and internal consistency to measure personality traits at different time and occasions. It is a promising psychometric instrument to measure emotional intelligence. This provides evidence for the stability of the USMEQ-i in measuring emotional intelligence in a sample of medical students.

## **Acknowledgement**

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**Corresponding author: Dr Muhamad Saiful Bahri Yusoff, Senior Medical Lecturer, Medical Education Department, School of Medical Sciences, Universiti Sains Malaysia, Kubang Kerian, 16150 Kota Bharu, Kelantan, Malaysia.**

**Email:** msaiful@kb.usm.my

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REVIEW ARTICLE

**THE EFFECTIVENESS OF AURICULAR ACUPUNCTURE  
FOR DRUG ADDICTION: A REVIEW OF RESEARCH  
EVIDENCE FROM CLINICAL TRIALS**

*Pei Lin Lua\* & Nor Samira Talib\**

**\*Centre for Clinical and Quality of Life Studies (CCQoLS)  
Faculty of Medicine and Health Sciences (FMHS), Universiti Sultan Zainal  
Abidin (UniSZA), 20400 Kuala Terengganu, Terengganu, Malaysia.**

**Abstract**

**Objectives:** This review aims to compile and evaluate all available randomised controlled trials (RCTs) of auricular acupuncture (AA) treatment in drug addiction population with emphasis on the length of treatment course, needle-points, outcome measures, reported side-effects and overall outcomes. **Methods:** Science Direct, Medline and EBSCOhost databases were searched. From the year 1990 until 2010, only full-length English articles incorporating RCTs related to AA studies (needle-based only) in drug addiction such as heroin, morphine, methamphetamine and cocaine were included. Studies involving the usage of various methods of electro-acupuncture and investigations relating to cigarette-smoking or alcohol addiction were excluded. **Results:** Eight RCTs met all inclusion criteria comprising of 1,594 respondents (age = 19 - 46 years; male = 57% - 76%). Most were involved in cocaine addiction. Overall, trials were designed with brief periods of treatment course and utilised three to five standard National Acupuncture Detoxification Association (NADA) points (*Sympathetic, Lung, Liver, Kidney and Shen men*), but inconsistent *sham* points. All trials included urine toxicology test as the main outcome measure while data on side-effects incidence was insufficient. **Conclusions:** Overall, four of the RCTs reported positive outcomes although at this point, AA's effectiveness and safety could not be substantially confirmed. For the future, high-quality RCTs of AA are urgently required to provide a clearer understanding on the usefulness of this complementary therapy in drug addiction treatment. *ASEAN Journal of Psychiatry, Vol. 13 (1): January – June 2012: 55-68.*

**Keywords:** Acupuncture, Addictions, Randomised Controlled Trials

**Introduction**

Drug abuse and addiction have become major social and serious public health problems, which had resulted in the world-wide spread of infectious diseases such as HIV/AIDS, hepatitis B and hepatitis C. These diseases are highly associated with the shared use of needles amongst intravenous drug users [1]. From the

statistics of the World Drug Report, it has been estimated that between 155 - 250 million people or 3.5% - 5.7% of the total population aged 15 and above had used illicit substances in 2008. Cannabis remains as the world's most widely produced and used illicit substance involving between 130 - 190 million people per year. In addition, more than 15 million opiate users were also reported globally. However, there are signs

of increase in synthetic drug use such as amphetamine-type stimulant and the usage is comparatively higher than cocaine and opiate drugs. Cocaine use itself is common in North America, Europe and some other countries [2].

Expectedly, drug addiction treatment and rehabilitation programmes have been initiated in many countries in which examples include naltrexone, buprenorphine and the synthetic opioid methadone, the latter has been demonstrated to be effective for opioid dependence in many northern and western European countries [3,4]. Another treatment alternative which has been tested is levo-alpha-acetylmethadol (LAAM) which was approved for use in the USA as an opioid maintenance drug in 1993 [5]. However, these pharmacological modalities are plagued with numerous side-effects such as constipation, decreased sexual desire, drowsiness and vomiting [6]. Furthermore, the number of drug treatment centres and access to these facilities around the world are still lacking [2]. The same report estimated that in 2008, only around one fifth of drug users worldwide had received treatment in the previous year which meant that another 20 million drug dependent people did not receive treatment at all [2]. This scenario became complicated as further statistics showed significant increase in the number of relapse despite treatment provision [7].

Therefore, in attempts to reduce the relapse rate, to minimise the various side-effects of conventional treatment as well as to increase the availability of addiction treatment, new treatment approaches such as those involving alternative therapies need to be persistently explored. The use of auricular acupuncture (AA) for the treatment of addiction has grown substantially in the past decade and it is in widespread use in drug rehabilitation centres especially across China [8].

The use of AA was first developed by a French physician in 1951 and later it was serendipitously observed that AA could relieve opiate withdrawal signs in addicts [9,10]. AA is

the procedure of inserting and manipulating very fine needles into the acupuncture points on the external surface of the ears (auricles) bilaterally. Based on the theory that the ear is a microsystem representing the entire human body, the stimulation of AA points would therefore impose a therapeutic impact on bodily organs, systems and functions. Consequently, it can be beneficially used to treat a wide range of health problems including drug addiction [9]. The National Acupuncture Detoxification Association (NADA) of AA protocol or often referred to as the NADA or five-point protocol is universally recognised as the general treatment guideline for addiction. The standard NADA points for addiction or detoxification are *Shen men*, *Sympathetic*, *Kidney*, *Liver* and *Lung* points [11].

Despite the complexity of the underlying mechanisms of AA, many researchers agree that illicit substances mainly alter the concentration of opiate peptides in the brain [12]. Incidentally, various studies have linked AA to the production of endogenous opiate peptides [13]. The dopamine pathway is also believed to be the final route for drug actions such as cocaine, heroin, morphine and alcohol. It is associated with feelings of well-being, pleasure and reinforcement; contributing to the continued drug abuse and the development of drug addiction [14,15]. In the brain, drugs of abuse act to produce a large increase in dopamine which has long been associated with addictive behaviours [16]. A recent study by Yang and colleagues found that acupuncture helps in balancing the dopamine levels through both positive and negative reinforcements of addiction pathway in the brain, hence reducing their craving and withdrawal symptoms as well as strengthening the role of acupuncture in drug dependent treatment [17].

Existing clinical evidence seemed to support the notion that AA is somehow effective in ameliorating withdrawal and craving symptoms associated with opiate and cocaine dependence, leading to its increasing popularity and acceptance as a treatment option in Western

countries [18]. Intriguingly, the co-administration of acupuncture with modern medicine has even showed some synergistic effects in detoxification [19]. The advantages of acupuncture included its low cost, favourable safety profile, lack of side-effects and simple administration [20].

Although a number of preliminary studies investigating the effectiveness of AA for the treatment of drug addiction have reported positive outcomes, findings from the more scientifically controlled studies have to-date been inconclusive [13]. A systematic review by D'Alberto could not strongly confirm that AA was an effective treatment for cocaine abusers [20]. By focusing on merely six RCTs, the author concluded that the NADA protocol of five treatment points still offer the best possible combination of acupuncture points and this review also did not elaborate on the study duration or the outcome measures employed [20]. Other review articles have largely concentrated on acupuncture in the management of both alcohol addiction as well as cocaine dependence [21-23]. In 2006, Jordan completed a review on the efficacy of acupuncture as treatment for opiate addiction, covering 33 years of reported literature and abstracts. This review generated findings that supportive evidence often came from non-controlled and non-blinded trials with no significant evidence for the effectiveness of acupuncture coming from RCTs. Nevertheless, the review was not specific to only AA in RCTs and no dates were used as the search cut-off periods [24].

To complement the existing gaps, our current review serves to dissect several new issues in addition to the previous work because to the best of our knowledge, there was no other review article which had discussed information on all outcome measures and the duration of treatment course of AA in RCTs, particularly for drug addiction treatment in the past 20 years. In the light of the recent introduction of Traditional and Complementary Medicine (T/CM) in our country [25], alternative approaches in tackling many chronic health disorders including drug

addiction are now highly sought by patients. This scenario is further propelled by the growing global interest and the increasing acceptance for T/CM such as traditional Malay massage and acupuncture which have been offered in selected government hospitals in Malaysia.

Essentially, AA has been evaluated in only a few well-controlled clinical trials and concrete results to support its application as a standard treatment for substance dependency is still controversial. Consistent outcomes are currently lacking. In order for these problems to be dealt with effectively, a review of the available RCTs to dissect important issues such as treatment duration, needle-points, reported side-effects and outcome measures is timely. The specific directions as to where future efforts in addiction treatment need to be focused and emphasized on are hence indicated.

## **Methods**

### ***Search strategy and selection criteria***

The Science Direct, EBSCOhost and Medline databases were searched. The following terms were entered and combined as keywords: "ear / auricular / acupuncture", "addiction / substance (ab)use / drug (ab)use / cocaine / heroin / methamphetamine / morphine / opioid" and "randomised / control / trial". The window time frame of article publication was set for the past 20 years (1990-2010). Only full-length English articles reporting RCTs related to AA studies (needle-based only) in drug addiction were selected. Additionally, all related articles on AA for the treatment of illicit drugs abused such as heroin, morphine, methamphetamine and cocaine were also included. Excluded studies were those involving the usage of any method of electro-acupuncture and other related techniques as well as techniques involving other parts of the body. Investigations relating to cigarette-smoking or alcohol addiction plus abstracts, unpublished studies and reviews were also not selected.

### **Data collection and analysis**

Demographic information for all participants in the selected studies was summarized according to their publication year, country, title of study and age (presented as mean, standard deviation and range). Besides that, the type of drug used, existing treatment, employment status, gender and ethnicity were depicted as percentages. In addition, the following key information was extracted from each study i.e. first author, publication year, sample size, experimental and control treatment, NADA points, main outcome measure(s), reported side-effects, and main findings.

### **Results**

From the year 1990 until 2010, a total of

eight articles involving RCTs of AA therapy for cocaine and opioid detoxification were found. Articles from the Journal of Substance Abuse Treatment (n=5) were the majority and the rest of the articles were published in the Journal of Alternative and Complementary Medicine, Archives of Internal Medicine Journal and Journal of American Medical Association (one article each). All included trials were carried out in the USA, United Kingdom and Sweden [26-33]. However, a second study by Bullock and colleagues has not been included in this review due to the additional acupuncture points used on the wrist area instead of solely intervening on the ear lobes (auricular) [29]. Overall, these studies have mainly focused on cocaine addiction.

**Table 1. An Overview of Demographic Indicators of Respondents Enrolled in Auricular Acupuncture (AA) Randomised Controlled Trials (RCTs) from the Year 1993 until 2009.**

No	Authors (year)	Country	Age (year) (Mean / Mean $\pm$ SD / Range)	Drug used (%)	Existing treatment(s)	Employment status (%)	Gender (%) / ratio	Ethnicity (%)
1	Avants et al. [26] (2000)	USA	37.0 $\pm$ 6.0	• Cocaine = 100.0	• Methadone	• Employed = 10.0 • Unemployed = 90.0	• Male = 57.0 • Female = 43.0	• Caucasian = 44.0 • African American = 38.0 • Hispanic = 16.0 • Others = 2.0
2	Bearn et al. [27] (2009)	United Kingdom	35.9 $\pm$ 6.6	• Cocaine = 34.5 • Heroin = 64.3 • Amphetamine = 2.5 • Cannabis = 33.5 • Others = 24.1 (Percentage $\neq$ 100% because each patient had used $\geq$ 1 drug)	• Methadone	NA	• Male = 76.0 • Female = 24.0	NA
3	Berman et al. [28] (2004)	Sweden	33.5	• Heroin = 12.0 • Amphetamine = 59.0 • Cannabis = 18.0 • Others = 14.0 (Percentage $\neq$ 100% because each patient had used $\geq$ 1 drug)	None	NA	• Male = 61.0 • Female = 39.0	NA
4	Bullock et al. [29] (1999)	USA	30.2 $\pm$ 6.0	• Cocaine = 100.0	None	NA	• Male = 69.9 • Female = 30.1	• Caucasian = 21.2 • African American = 66.7 • American Indian = 2.5 • Puerto Rican = 0.2 • Cuban = 0.7 • Others = 8.2
5	Lipton et al. [30] (1994)	USA	30.1 / 19.0 – 46.0	• Cocaine = 46.6 • Heroin = 12.7 • Cannabis = 38.7 • Others = 24.7 (Percentage $\neq$ 100% because each patient had used $\geq$ 1 drug)	• Methadone	• Full-time = 48.0 • Part-time = 14.0 • Unemployed = 32.0 • Retired / disabled = 6.0	• Male = 72.0 • Female = 28.0	• Caucasian = 6.7 • African American = 60.7 • Hispanic = 32.6
6	Margoli	USA	37.5 $\pm$ 6.3	• Cocaine = 100.0	None	• Employed = 10.3	• Male = 60.8	• Caucasian = 51.0

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	n et al. [31] (2002a)					• Unemployed = 89.7	• Female = 39.2	• African American = 32.7 • Hispanic = 13.9 • Others = 2.4
7	Margolin et al. [32] (2002b)	USA	38.8 ± 7.6	• Heroin = 64.3 • Amphetamine = 2.5 • Cocaine = 7.5 • Cannabis = 33.5 • Others = 27.5 (Percentage ≠ 100% because each patient had used ≥ 1 drug)	None	• Full-time = 24.5 • Unemployed = 75.5	• Male = 69.2 • Female = 30.6	• Caucasian = 28.9 • African American = 60.2 • Hispanic = 7.3 • Others = 3.6
8	Washburn et al. [33] (1993)	USA	40.5	• Heroin = 100.0	• Methadone	• Full-time = 9.5 • Part-time = 12.0 • Unemployed = 78.0	• Male = 68.0 • Female = 32.0	• Caucasian = 30.0 • African American = 60.0 • American Indian = 1.0 • Mexican = 5.0 • Other Latino = 4.0

Note: NA = not available.

### ***Demographic indicators***

The total number of participants enrolled in all the included RCTs was 1,594 from the year 1993 until 2009. A total of six studies were carried out in the USA. The average age of participants across all studies ranged from 19 - 46 years old. Most of the respondents were unemployed (32% - 90%). Across all studies, the most common drugs of abuse were cocaine and heroin. About half of the participants have been receiving methadone as part of their treatment for drug addiction problems. The percentage of male respondents was generally higher (57% - 76%) than the females (24% - 43%). According to sample ethnicity, the three major ethnic groups involved in these trials were African American (32.7% - 66.7%), Caucasian (6.7% - 51.0%) and Hispanic (7.3% - 32.6%). These demographic information are as depicted in Table 1.

### ***Length of treatment course***

The length and number of treatment sessions varied between studies. Majority of the studies applied five sessions of AA weekly for a total duration of two to eight weeks. Overall, the studies provided at least 14 sessions to a maximum of 40 sessions of AA treatment. The

longest duration of treatment course was eight weeks - Table 2.

### ***Auricular acupuncture points***

The five standard needle-points suggested by NADA protocol included *Sympathetic, Lung, Liver, Kidney and Shen men*. Of the eight studies, five trials did not include the *Kidney* point [26,30-33]. One study used three needle-points [29]. Another two studies utilised five needle points [27,28]. For the control group, most researchers preferred to use non-specific or *sham points* such as helix control and only one study used oil and metal clips on the ears [27,28,31,32]. The average duration of needling time was 20 to 45 minutes per session.

### ***Side-effects***

Only five trials recorded the side-effects during treatment. The most commonly-reported side-effects were pain and *De Qi* [26,31,32]. The *De Qi* response has been reported to be related to warmth or fullness sensation felt upon needle insertion. Pain at the needle points was reported in only one trial [28]. In another study, slight bleeding at the site of needle insertion, dizziness and mild nausea have been recorded [33].



**Table 2. An Outcome Summary of Randomised Controlled Trials (RCTs) for Drug-dependent Population using Auricular Acupuncture (AA) as Intervention.**

No.	Authors (year)	Sample (n)	Experimental treatment	Control treatment	NADA points	Main outcome measures	AA side-effect(s)	Main results (Positive / Negative)	Comments
1	Avants et al. [26] (2000)	82 patients (on MMT)	• 5 AA sessions weekly for 8 weeks (40 minutes per session)	• <i>Sham points</i> • Relaxation (3 different video shows)	• <i>Symphathetic</i> • <i>Lung</i> • <i>Liver</i> • <i>Shen men</i>	• 3 times weekly urine toxicology • Addiction Severity Index (ASI) • Treatment Credibility Scale (TCS) • SOCRATES-8D	• Pain • <i>De Qi</i>	• Significant cocaine free in urine for experimental vs relaxation control (odds ratio = 3.41, 95% CI = 1.33 - 8.72, p = 0.01) • Significant overall reduction in cocaine use for both Experimental and sham point treatment (odds ratio = 2.40, 95% CI = 1.00 - 5.75, p = 0.05) • Overall conclusion: positive	• No elaboration of side-effect(s) • 4 points instead of 5 points were used
2	Bearn et al. [27] (2009)	83 patients (on MMT)	• 5 AA sessions weekly for 14 days (30 - 40 minutes per session)	• Application of oil and five metal clips on the ears.	• 5 points in the ear cartilage ridge area	• 3 times weekly urine toxicology • Maudsley Craving Scale (MCS) • The 10-item Short Opiate Withdrawal Scale (SOWS)	• NA	• No significant difference in the severity of opiate withdrawal scores between experimental and control treatment • No significant difference in mean craving scores for both experimental and control treatment • Overall conclusion: negative	• Treatment duration was short • Control treatment could be recognised by the patients due to its non-needle application • NADA point selection was not specified • No mention of side-effect(s) • Positive effects of AA could not be experienced by the patients probably due to brief treatment duration
3	Berman et al. [28] (2004)	158 prison inmates	• 5 AA sessions at the first week and 3 AA sessions weekly for 3 weeks (40 minutes per session)	• 5 points on the helix of the auricles bilaterally	• <i>Symphathetic</i> • <i>Lung</i> • <i>Liver</i> • <i>Kidney</i> • <i>Shen men</i>	• Every other day urine toxicology • Simple drug use questionnaire • Treatment Credibility Scale (TCS) • Symptom Check List 90 (SCL-90) • Acupuncture Treatment Assessment Scale (ATAS)	• Pain	• No significant side-effect was detected for both experimental and control treatment • Symptoms of discomfort were reduced for both treatments • Sleeping time was improved for experimental and control treatment • Overall conclusion: negative	• The control treatment, side-effects, the NADA point selection and outcome parameters were properly explained. • Seemed a relatively more structured study design compared to others • The data did not show any difference between the effect of experimental and control treatment
No.	Authors (year)	Sample (n)	Experimental treatment	Control treatment	NADA points	Main outcome measures	AA side-effect(s)	Main results (Positive / Negative)	Comments
4	Bullock et al. [29] (1999)	236 patients	• 1 <sup>st</sup> arm – Conventional • Multicomponent Residential Treatment	• <i>Sham AA</i> (any 3 non-specific points)	• Any 3 NADA points	• Random urine toxicology - weekly • Addiction Severity Index (ASI)	• NA	• Significant differences between treatments failed to be identified • Overall	• Did not mention which 3 NADA points were selected • No elaboration on <i>Sham point</i> • No side-effect was

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			<ul style="list-style-type: none"> <li>(CMRT)</li> <li>2<sup>nd</sup> arm - CMRT + NADA points</li> <li>3<sup>rd</sup> arm - CMRT + control treatment</li> <li>- 28 AA sessions for 8 weeks (45 minutes per session)</li> <li>- Note: CMRT-behavioural therapy and education counselling were provided)</li> </ul>			<ul style="list-style-type: none"> <li>Beck Depression Inventory (BDI)</li> <li>Medical Outcome Study (SF-36)</li> <li>Craving measure - weekly</li> </ul>		<p>conclusion: negative</p>	<ul style="list-style-type: none"> <li>mentioned</li> <li>Less number of NADA points used - could be insufficient to produce better results</li> <li>Experimental treatment was quite complicated and high commitments from the patients were needed</li> </ul>
5	Lipton et al. [30] (1994)	150 patients	<ul style="list-style-type: none"> <li>6 AA sessions weekly for 4 weeks (45 minutes per session, up to 2 AA sessions per day)</li> </ul>	<ul style="list-style-type: none"> <li>Non-specific control (Knee, Sciatic, Elbow &amp; Shoulder)</li> </ul>	<ul style="list-style-type: none"> <li><i>Symphathetic</i></li> <li><i>Lung</i></li> <li><i>Liver</i></li> <li><i>Shen men</i></li> </ul>	<ul style="list-style-type: none"> <li>Daily urine toxicology</li> <li>Addiction Severity Index (ASI)</li> <li>Craving measure</li> </ul>	NA	<ul style="list-style-type: none"> <li>Lower cocaine metabolite levels in experimental subjects relative to control treatment</li> <li>Significant decrease in cocaine consumption by both treatment groups</li> <li>Overall conclusion: positive</li> </ul>	<ul style="list-style-type: none"> <li>Incentive was provided</li> <li>4 points instead of 5 points were used</li> <li>No mention of side-effect(s)</li> </ul>
6	Margolin et al. [31] (2002a)	165 patients (on MMT)	<ul style="list-style-type: none"> <li>5 AA sessions weekly for 8 weeks (40 minutes per session)</li> </ul>	<ul style="list-style-type: none"> <li><i>Sham points</i> (inserted into the helix of the auricles bilaterally)</li> <li>Relaxation (3 different video shows)</li> </ul>	<ul style="list-style-type: none"> <li><i>Symphathetic</i></li> <li><i>Lung</i></li> <li><i>Liver</i></li> <li><i>Shen men</i></li> </ul>	<ul style="list-style-type: none"> <li>3 times weekly urine toxicology</li> <li>Addiction Severity Index (ASI)</li> <li>Treatment Credibility Scale (TCS)</li> <li>SOCRATES-8D</li> </ul>	<ul style="list-style-type: none"> <li>Pain</li> <li><i>De Qi</i></li> </ul>	<ul style="list-style-type: none"> <li>Positive effect for AA in group 1 (received either experimental or control treatment including individual counselling, coping skill therapy and no incentive were provided)</li> <li>No significant effect in group 2 (received treatment similar with group 1 but relaxation treatment and incentive were provided)</li> <li>Overall conclusion: positive</li> </ul>	<ul style="list-style-type: none"> <li>No elaboration of side-effect(s)</li> <li>4 points instead of 5 points were used</li> </ul>
No.	Authors (year)	Sample (n)	Experimental treatment	Control treatment	NADA points	Main outcome measures	AA side-effect(s)	Main results (Positive / Negative)	Comments
7	Margolin et al. [32] (2002b)	620 patients (on MMT)	<ul style="list-style-type: none"> <li>5 AA sessions weekly for 8 weeks (40 minutes per session)</li> </ul>	<ul style="list-style-type: none"> <li><i>Sham points</i> (inserted into the helix of the auricles bilaterally)</li> <li>Relaxation (video shows &amp; soft music)</li> <li>Adjunct weekly individual</li> </ul>	<ul style="list-style-type: none"> <li><i>Symphathetic</i></li> <li><i>Lung</i></li> <li><i>Liver</i></li> <li><i>Shen men</i></li> </ul>	<ul style="list-style-type: none"> <li>3 times weekly urine toxicology</li> <li>Addiction Severity Index (ASI)</li> <li>Treatment Credibility Scale (TCS)</li> <li>SOCRATES-8D</li> <li>Self-reported</li> </ul>	<ul style="list-style-type: none"> <li>Pain</li> <li><i>De Qi</i></li> </ul>	<ul style="list-style-type: none"> <li>Significant overall reduction in cocaine use for both treatments (odds ratio = 1.40, 95% CI = 1.11 - 1.74, p = 0.01)</li> <li>No significant difference in treatment condition for</li> </ul>	<ul style="list-style-type: none"> <li>4 points instead of 5 points were used</li> <li>Incentive was provided</li> <li>Utilisation of many outcome measures could be burdening to the patients, hence hindering the effectiveness of AA</li> </ul>

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				drug counselling		cocaine use - weekly • The Treatment Services Review (TSR)- weekly		experimental vs control treatment • No difference between both experimental and control treatment in terms of retention rate • Overall conclusion: negative	
8	Washburn et al. [33] (1993)	100 patients	• Daily AA session for 3 weeks (20-45 minutes)	• Sham points	• Sympathetic • Lung • Liver • Shen men	• Weekly urine toxicology • Withdrawal symptoms checklist • Self-reported drug use (daily)	• Slight bleeding at needle insertion site • Mild nausea • Dizziness	• Experimental patients were retained longer than those on control treatment • Experimental treatment was more effective for those with lighter addiction habits • Overall conclusion: positive	• Sham point selection was not specified • The duration of AA session was not standardised • Urine test was not included in methodology but was presented in the results • Incentive was given • 4 points instead of 5 points were used

Note: AA = auricular acupuncture; MMT = Methadone Maintenance Treatment; NADA= National Acupuncture Detoxification Association; NA = not available; RCT = randomised controlled trial; vs = versus.

### ***Outcome measures***

The urine toxicology test to ascertain for abstinence from illicit drug use was implemented by all studies. A total of five studies utilised the ASI questionnaires to assess the frequency of drug use as well as other psychosocial areas [26,29,30-32]. Four trials have used the TCS which assessed confidence level with the treatment received and the SOCRATES-8D questionnaire was employed by three studies to evaluate readiness for behavioural change in drug use [26,28,31,32]. Based on the overall outcome measures, the other instruments used included BDI (assessing anxiety and depression symptoms), craving measures, TSR (to monitor treatment services received), SCL-90 (to measure psychiatric status), ATAS (physical and psychological well-being assessment), MCS (to evaluate the multi-dimensional nature of drug craving), SOWS (measuring severity of opiate withdrawal), simple drug use questionnaire, Medical Outcome Study SF-36 (assessing respondent's general health) and cocaine craving questionnaire.

Based on the urine toxicology outcomes, instead of the expected significant reduction in drug use, many researchers frequently discovered that

there was no significant difference between experimental and control treatments. Similar findings were shown for the frequency of drug use and the patients' readiness to change their addictive behaviours. However, patients' confidence level towards acupuncture increased over time for participants in the experimental group but decreased instead in the control group [28]. An evaluation of psychiatric condition was only carried out in two studies by utilizing the BDI and SCL-90 [28,29]. Despite this, researchers were unable to detect any significant difference between experimental and control respondents in terms of amelioration of psychiatric symptoms. Three RCTs utilised instruments related to drug withdrawal and craving measures but did not indicate any significant difference between groups [27,30,33]. Only one trial assessed the respondent's general well-being by using the SF-36 questionnaire, demonstrating a trend of improvement in most domains [29].

### ***Overall findings***

According to the assessment of the overall results, of the eight RCTs reviewed, four reported positive outcomes while another four trials were negative in their findings (i.e. studies which failed to produce significant outcomes).

Most studies utilised four rather than five needle points as suggested by NADA as well as a mixed range of treatment duration, unstandardised needling time and various selection of control treatment. All included trials were carried out in developed countries.

## **Discussion**

This paper intends to provide a review of published RCTs of AA over the past 20 years mostly with regard to cocaine and opioid addiction. Trend of reviews, suggestions for future research directions as well as limitations of this study have been importantly highlighted.

Overall, the published AA trials were designed with a variety of duration of treatment courses which might have produced different results, thus contributing bias towards the final study outcomes. In addition, most studies did not perform any long-term observation to evaluate the over-time effects of AA on drug dependence. Ezzo and colleagues discovered that sufficient treatment sessions were significantly associated with treatment outcome whereby six or more treatment sessions were more effective than fewer sessions, thus strengthening the argument on the importance of targeting for longer study duration [34]. Consequently, it was rather difficult to draw concrete conclusions regarding the treatment effectiveness based on their length of treatment course even though more than half of the trials with at least five sessions showed positive outcomes in terms of drug urine test, drug consumption, side-effect(s) and withdrawal symptoms.

The selection of treatment points was another most important aspect of AA research especially when such research is still in its infancy. There was some variability in terms of the number of needle points utilised in these RCTs which would have been better if they were consistent [35]. In addition, the absence of detailed information on the needle points selected in two studies have somehow hindered more appropriate conclusion on our part.

With regard to the control treatment, some researchers used non-specific points without explaining which points were their main targets. If *sham points* had active (positive) effects, the comparison of outcomes between the treatment and *sham* groups would not show the true impact of AA treatment and the conclusion that this treatment had no significant effect could be seriously wrong because the *sham points* were inappropriate. However, a few studies preferred to use the helix points as control treatment. This was encouraging because most results had shown that needle insertion into the helix sites had the lowest systemic effect and most appropriate for this purpose [35]. In addition, the usage of oil and metal clips on the ears as the control treatment in one study might have introduced bias towards the study findings which could be recognised by the patients due to its non-needle application compared to other studies [28].

With respect to needling time, most included studies have adhered to the standard NADA protocol whereby in the normal sessions, the needles were required to be left in for 30 to 45 minutes except for a single trial which was carried out by Washburn and colleagues [33]. In this latter trial, once needles were inserted, they were only left for 20 minutes at a minimum (no reason was given) until the maximum duration of 45 minutes.

Throughout all the clinical trials reviewed, insufficient and unavailable data has prevented further complete analysis on the side-effects of AA. The subjective sensation or feeling called *De Qi* reported by patients that included heaviness, soreness, numbness and sense of swelling was supposedly associated with beneficial effects [36]. This was likely the result of the rhythmic contraction of muscle fibers surrounding the AA needle [8]. However, no further information could be found with regard to other serious form of side-effects. Thus, the adverse outcomes of this traditional treatment modality could not be ascertained at this point although it was generally noted that the rate of

side-effects with the AA treatment was encouragingly low. This was supported by a previous study which claimed that no side-effect of AA was noted throughout all the clinical trials reviewed by D'Alberto [20].

Urine screens were the most valid method for determining the effectiveness of illicit drug detoxification [36]. This biochemical validation gave the most reliable indication of the drug used. However, it seemed to somehow "burden" most patients in terms of its need for regular urine sampling, leading to reduced follow-up rates. Only a small handful of studies have provided incentives to overcome the problem of high attrition rates which imposed logistic difficulties on subsequent analysis. Financial payments are often used in large clinical trials to ensure a sufficient enrolment of participants.

Although the amount of money was not a particularly large sum, this financial incentive might have motivated the participants to support their addictive lifestyle than to generate a sincere desire to abstain from drugs [36].

Long-term drug free period was probably the most important outcome because treatments would not be regarded as very useful if they merely reduced patients' drug use during the active treatment period. Hence, a follow-up time frame of at least several months was therefore crucial to the assessment of AA's effectiveness whereas the longest follow-up period was only eight weeks from most trials we have gathered [37]. Therefore, the positive effects of AA could not have been adequately experienced by patients probably due to the short treatment duration. As we have gathered from the literature, AA's effects are usually highly dependent on the severity of the disease and the vitality of individuals. Therefore, the number of treatments needed would vary between persons and longer term therapy was required to truly experience its positive effects [38].

Overall, a lack of consistent instruments utilised in AA trials was also obvious. Besides, there has been relatively little focus on the psychiatric

symptoms of anxiety and depression in the outcome measures employed. Based on our observation, most of the studies were mainly focusing on objective evaluation rather than subjective assessment such as readiness to behavioural change and health-related quality of life (HRQoL). In recent years, a paradigm shift from disease-focused to patient-focused has taken place in many healthcare systems designed to meet the needs and wishes of the patients [21]. Therefore, patients' own evaluation of their well-being should be encouraged in AA trials because it has been universally accepted to be as important as other parameters in medical care. Furthermore, the influence of addiction itself on HRQoL has been widely established [39]. In addition, HRQoL instruments specific for drug addiction are evidently still lacking. Other subjective evaluations could also be considered such as extensive assessments of psychiatric status and satisfaction level. In general, high confidence and satisfaction levels seemed to be influential on the treatment received and might be indicative of condition improvement [40,41].

### ***Suggestions and future research directions***

The efficacy of AA as a drug treatment has been subjected to conflicting findings in clinical trials. Some findings have been promising but others showed no difference between standard NADA treatment and *sham* AA. Furthermore, trials in AA possessed numerous methodological challenges, for example issues in selecting a suitable control, depth, angle and site of needle insertion need to be appropriately addressed. A more comprehensive data on side-effects of AA should be beneficial from the trial findings, so that any related problems could be dealt with effectively.

As addiction problem must be addressed for the entire country, future studies should be more focused on samples in other parts of the world such as in developing and Asian countries, apart from the first world countries to account for socio-cultural diversity in AA trials. It hence seems beneficial to organize frequent joint dialogues between medical healthcare personnel

and the acupuncture practitioners to discuss and resolve many intriguing questions, which are still plaguing this research area. Hopefully, the therapeutic value of AA can be defined more thoroughly for its mechanism of action to be completely understood.

### ***Limitations***

The overall information presented here was of course not without flaws. Even though a thorough search strategy was utilised, we could not be certain that all relevant trials have been included because many acupuncture trials have been reported in languages other than English, particularly in Chinese, Japanese and Korean which were not identified and analysed. Moreover, the major databases used for literature search such as Science Direct, Medline and EBSCOhost contain predominantly English language articles, hence articles in other languages might have been overlooked. As majority of the trials have been conducted in USA, this review may not be generalisable to studies in other regions. Therefore, additional investigations should be embarked upon among diverse samples of participants with more comprehensive coverage.

### ***Conclusion***

From the still limited evidence gathered, the overall effectiveness of AA in treating drug addiction remains inconclusive. Nonetheless, this therapy seemed to hold some potential as alternative or additional component of substance abuse management because of its lack of adverse effects, simple administration and general acceptability to patients. Considering these possibilities, more rigorous and extensive studies are warranted which should target larger sample sizes to detect tangible and beneficial treatment effects with longer duration of treatment course, minimal rate of attrition, documentation of side-effects as well as appropriate needle-points as recommended by the NADA protocol. We hence could not provide a concrete conclusion at this point due to the inextensive evidence from small number

of available RCTs. Perhaps future studies should also look into developing novel HRQoL instruments, which could play a crucial role in assessing HRQoL specific and unique to this cohort because of the different HRQoL concerns affecting addict individuals.

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**Corresponding author: Pei Lin Lua, Centre for Clinical and Quality of Life Studies (CCQoLS), Faculty of Medicine and Health Sciences (FMHS), Universiti Sultan Zainal Abidin (UniSZA), Kampus Kota, Jalan Sultan Mahmud, 20400, Kuala Terengganu, Terengganu, Malaysia.**

**Email:** peilinlua@unisza.edu.my

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## REVIEW ARTICLE

# PSYCHIATRIC COMPUTER INTERVIEWS: HOW PRECISE, RELIABLE AND ACCEPTED ARE THEY?

*Wachiraporn Arunothong\*, Pichai Ittasakul\*\**

*\*Lampang General Hospital, Lumpang, Thailand; \*\*Department of Psychiatry, Faculty of Medicine, Ramathibodi Hospital, Mahidol University, Bangkok, Thailand.*

## Abstract

**Objective:** Computer-assisted personal interviewing has been developed to help health care providers in gathering and processing information from the patients for diagnosis, treatment and intervention. Psychiatric service providers and patients, however, doubt this instrument in terms of the preciseness and reliability of the instruments because generally, psychiatric interviews rest on the interviewers' skills to create trust between patients and providers in order to go in-depth on sensitive issues. In this review, the existing literatures on the issue of reliability and precision of psychiatric computer interviews on patients' sensitive issues will be evaluated based on my work and experience in psychiatric care. **Methods:** Literature search on psychiatric computer interviews, which include patients and mental health professionals' attitude, which may include sensitive issue was conducted. **Results:** Patients prefer computer interviews rather than human interviews for revealing their sensitive issues while mental health professionals value human interviews and judgment more than computers. Computers have limitations in understanding human natural language, human interaction and non-verbal communication. **Conclusion:** It is recommended that the use of psychiatric computer interviews should be used under supervision of mental health professionals. *ASEAN Journal of Psychiatry, Vol. 13 (1): January – June 2012: 69-80.*

**Keywords:** Psychiatric Computer Interviews, Precision, Reliability, Acceptability

## Introduction

### *Introduction to the Psychiatric Computer Interview Process and Methods*

Psychiatric care providers are becoming increasingly aware that computers provide an opportunity to elicit information directly from patients by means of self-administered questionnaires. Nearly 40 years ago Slack et al., [1] discovered that patients could operate a computer themselves without prior training, and could answer questions which were displayed to them. Since then, psychiatric computer

interviews were developed and reported in depressed [2] and alcoholic patients [3] and determined that patients could understand the procedure and answer questionnaires by themselves while their answers were close to those obtained by conventional means.

The first generation of computer interviews were so-called "patient-directed." The subject sat at the terminal and typed in answers for him/herself [4-7]. These systems used by psychiatric patients were also found to be easy to use [8] accurate [3, 9] and well-accepted [10].

### ***Psychiatric Interview and Diagnoses***

Mental disorders have been found to be common in the general population. The World Health Organization (WHO) reported in 2001 [11] that about 450 million people worldwide suffer from some form of mental disorder or brain condition, and that one in four people meet criteria at some point in their life. In addition, the co-occurrence of two or more psychiatric diagnoses ('psychiatric comorbidity') has been reported to be very frequent. Approximately 50% of mental health illness patients have at least one psychiatric comorbidity [12], whereas 21% have at least 3 or more [13].

Psychiatric diagnoses are not easily made because patients sometime do not want to share or talk about their experiences which result in suffering and shame. Therefore, only mental health providers who have competent skills and experience would clarify this issue thoroughly.

### ***Identification of Psychiatrically Sensitive Issues***

Taking psychiatric history may not be easy and straightforward. Patients' real problems sometime are hidden or covered by their intentional (conscious) or unintentional (unconscious) psychological defense mechanisms, which mean that they may need more than one session of the interview to uncover and understand the whole picture. The hidden information is usually the experiences that patients feel pain, suffering, shame, or re-traumatized especially, when they reveal, try to think or try to talk about it in front of others. These issues include emotional issues, sexual issues, suicidal behaviors and alcohol or illicit drug uses. Therefore, in this study all of these issues will be called sensitive issues.

To uncover sensitive information, psychiatric providers must use their skills and experiences to create trust and build rapport with the patients by putting patients and interviewers at ease, finding patients' pain and expressing compassion, evaluating patients' insight and becoming an ally, showing expertise, and establishing authority as a physician and a

therapist and balancing the roles of empathic listener, expertise and authority [14]. Therefore, since most of the psychiatric interviewing techniques to elicit patient's history of illness in-depth rely on human interaction and rapport, it is hard for mental health professionals to rely on computers.

It is generally acceptable that eliciting patient's information is sometime complicated. Since the demand of psychiatric service is increased by the number of patients who need services, psychiatric computer interviews have been developed in order to help mental health providers to reduce their interviewing workloads.

### ***Psychiatric Computer Interview Models (Structure, Dialogue, Checklist)***

Computer interviews that have been generally used in psychiatry could be classified into three modules; (1) Structured interview; (2) Dialogue interview; and (3) Screening (checklist) interview.

Structured computer interviews for diagnosis have been developed by referring to the DSM (*Diagnostic and Statistical Manual of Mental Disorder*) criteria or ICD (*International Statistical Classification of Diseases and Related Health Problems*). In a screening page, it contains a few short answer questions for patient demographic data such as age, height and weight. This is followed by general psychiatric screening questions and specific psychiatric criteria for diagnosis. Questions are presented in multiple choice forms and close-ended forms which include Y/N and rating scales. Each answer will determine the branch or track for the next question from its database and the scores will be summed for the result [8]. Some instruments are modularized so providers can pick and choose sections they are interested in. CIDI-auto 2.1, CAPI, SCID-I-RV, SCID-CV, and PROQSY are examples of these tools. Most of the structured psychiatric computer interviews are standardized and used as a gold standard for psychiatric diagnosis in many research.

The dialogue interview contains open-ended questions and closed-ended questions with rating scales. Patients respond to the opened-ended questions by explaining in words or by typing. Some computer dialogue interviews could interact with patients' responses by speaking or showing statements that they acknowledge patient's answers while encouraging discourse by delaying the time or pause for patients to respond [1]. Questions will be ordered from non-specific to specific symptoms and the answers will determine the branch or track for the next question. The answers and scores will be summarized for a final result.

The screening (checklist) interview contains psychiatric screening tools such as hopelessness scale, YMRS for mania, HAM-D or BDI for depression, Self esteem rating scale, and others. In the screening interview, patients are asked to complete or rate their symptoms on a computer's screen. When they finish, the scores will be summed and reported as positive or negative screening results. In addition, computer interview technology for screening has been developed in audio-CASI (computer assisted self-interviewing). This technology has been developed to help respondents who are not literate by reading the presented questions on the computer's screen to the respondents through headphones while respondents answer the questions via microphone beneath or inside the computer's monitor [15].

Due to the non-specific result of the opened-ended questions and the complicated evaluation of the result [16], computer interview dialogues are not as interesting as structural computer interviews or checklist interviews. However, since artificial intelligence has been implied in medical technologies, dialogue interviews which could give more detail and explore answers more in-depth may become interesting again in the near future.

In other words, even though we have computer interview technologies available, how confident are we that this technology can elicit patients' sensitive issues? To answer this important question, this paper will review various computer interviews for specific sensitive issues,

compare the effectiveness of the computer versus face-to-face interviews and evaluate the attitude of the stakeholders which are the patients and the mental health care providers.

## **Methods**

A literature search was conducted using Scopus, Cochrane reviews, PubMed, Psych INFO, and Medline in order to identify pertinent literature. Some of the key words used in various combinations consisted of "psychiatric", "computer interview", "ACASI", "sensitive issues", "substance abuse", "alcohol abuse", "suicide", "adolescent risk behaviours", "emotion", "sexual", "reliable", "precision", "attitude", "mental health professional", "patient", "ethics" and "future research". The aim of the literature search was to identify the use of psychiatric computer interviews in patient's sensitive issues while explore reliability and precision of the computer technologies and the acceptance among mental health professionals and patients. In addition, the last part of the review also concluded the future directions of computer interviews.

## **Results**

Sensitive issues are the issues that patients feel reluctant to reveal in front of others. Therefore, some researchers are curious how patients would react or responds if they were asked these questions from impersonal sources, i.e., a computer. The following paragraph will review the computer interviews used in exploring sensitive issues from each perspective.

### ***Emotional Problem***

Slack et al. [17] compared computer dialogue interviews with doctor interviews for emotional problems. Thirty-two enrolled participants were interviewed by both a doctor and a computer in different periods (morning vs afternoon) and in a different sequence (doctor first vs computer first). For the computer interview, the questions regarding their feeling and mood would be shown on the cathode-ray screen. Participants respond to the computers with a typewriter-like' keyboard and speak into a microphone beneath

the screen. The number of words was counted as a primary outcome while other circumstances such as afternoon/morning sessions or sequence of the interview were considered as a secondary outcome.

The results showed that subjects used more words when talking to doctors more than computers in both morning/afternoon sessions and in any sequence. Twenty-nine of the subjects had at least one general emotional problem. Within fourteen who had sadness from computer interviews, thirteen were affirmed by doctors. This indicated good reliability of the results. However, the weakness of the human interview was doctors were affected by the periods of the day while the computers were not. Furthermore, the authors concluded that subjects who had more words when talking to computers before talking to a doctor might assume that patient-computer dialogue could facilitate subsequent dialogue with a therapist. However, this study used only male subjects whose ages were 18-26 years-old, so it might not represent the overall population. Others studies form Matheson et al. [18] and Joinson et al. [19] compared computer interviews to face-to-face interviews reported that computers could elicit patients' information because computers enhanced private self-awareness while reducing public self-awareness. These two factors could lead to self-disclosure [20] because an increase in self-awareness makes people introspective about themselves whereas decreased public awareness makes patients who have low self-esteem or who are emotionally sensitive to rejection are encouraged to have more confidence to reveal themselves. Thus, in other word, self-disclosure related to an increase in accuracy of reports of history among psychiatric patients and descriptions of their problems [21]. Therefore, due to the mediated awareness by computers, even patients who are sensitive can reveal more personal information.

### ***Sexual Problems***

As mentioned above, people who hesitate when they are asked about the most intimate area of their lives (especially regards to sexual behavior) will often report on it inaccurately,

especially females who may underreport their problems [22-24]. Millstein et al., [25] compared interactive computer interview with face-to-face interview and self-administered questionnaires. One hundred and eight patients who joined the study were divided into 3 groups. Patients were asked about their general health status and past health history before leading to questions about specific sexual behaviors such as holding hands, hugging, kissing, masturbation, oral sex, and sexual intercourse. Sexual behavior reports were measured as a primary outcome while difficulty or embarrassment in participating in each type of interview was evaluated as a secondary outcome.

The results showed that patients who were in face-to-face interviews reported to be more engaged in sexual behaviors than in self-reports and computer interviews. Most subjects reported that face-to-face interviews facilitated their ability to express and to be understood.

However, this superior pattern of face-to-face versus computer interviews is not consistent. CASI and audio-CASI (ACASI) studies showed mixed results. Some researchers reported that patients who were interviewed by computers revealed more sexual behaviors and risky sexual behaviors (e.g. had sex with sex workers) than patients who were interviewed by doctor [15, 26, 27]. Potdar et al. [28] reported that the Audio-CASI approach failed to yield higher responses compared to the face-to-face interviews. Furthermore, Mensch et al., [29] insisted face-to-face mode produced more consistency with sexual transmitted disease laboratory screening and clinical diagnosis than ACASI and self-report modes. Therefore, in sexual behaviors interviews, computers may not be appropriate for all situations.

### ***Suicide and Para-suicide Behavior***

For suicidal and para-suicidal behaviors, many reports of computer interviews showed impressive results. Greist et al., [2] found some patients only confided suicidal ideas to the computer while most of them preferred to report to a computer over a clinician interview. Erdman

et al. [30], and, Greist et al., [2] reported computers performed well in accurately identifying attempters from non-attempters and accurately assigning probabilities of future suicidal behaviors. Study from Petrie et al., [31] used computer checklist interviews to evaluate hopelessness, depression, suicidal ideation and self-esteem in admitted patients who had attempted suicide. Her results revealed that computerized assessment was preferred by patients, who had higher levels of suicidal ideation, hopelessness and, lower levels of self-esteem. This may be because patients who have low self-esteem were very sensitive and easily got embarrassed in front of others. Therefore, this method was suited to them because they could avoid human reactions when they were interviewing.

Moreover, computer assessments for suicide showed superior results when they were used in specific groups of patients, for example, in HIV patients. The touch-screen, based computer-assessment was implied to assess suicidal ideation in HIV patients [32]. Suicidal ideation and the frequency of suicidal thought questions were incorporated in patient's routine self-reports. Fourteen percent of patients endorsed some level of suicidal ideation whereas three percent admitted suicidal ideation nearly every day. The suicidal ideations of the patients correlated with their underlying depression and substance use disorders. Although computer interviews have had good results and acceptance among patients who have suicidal ideas, it can be only an assisted interview tool to help providers screen or assess patients because suicidal ideation can cause death to the patients so it is considered a psychiatric emergency. It is necessary for patients who claim that they have suicidal ideas to have further interviews or evaluations by mental health care providers.

### ***Alcohol Use and Drug Abuse***

A major problem of evaluating drug and alcohol use in patients is it is hard to collect accurate and complete data from respondents. Personal interviews themselves are costly while respondents are guarded and sensitive. Moreover, it is often difficult to establish rapport

with the patient or make the patient concerned about their drug or alcohol use. Computer interviews also have been introduced to these patients; however, the results were uncertain. Bernadt et al. [4] compared computer interview with a nurse and a doctor interview in alcoholic inpatients showed that in detecting the amount of alcohol consumed, computers did not elicit higher consumption than human interviewers. This assumption was corresponding to Skinner et al. [33] that there were no significant differences between the methods of interviews: computer interview, oral interview and self-reports for levels of alcohol, tobacco and drug consumption while Single et al. [34] and Erdman et al. [35] reported that patients with problems with alcohol use reported disagreement among different methods of interviews more than patients who used marijuana, tobacco or other illicit substances.

However, this conclusion was contrary to Lucas et al. [3] that patients reported significantly greater amounts of alcohol consumption to the computer than they reported to the psychiatrists. Meanwhile, Erdman et al. [30] reported that patient's reports were found to be closer in agreement between computer and human interviews for alcohol-related disabilities, which generated dichotomous data (of a yes/no variety) than for the amount of alcohol consumed. He concluded that with the dichotomous data patients had a better agreement than with interval data (ie. how much, how often). Since patients with substance use disorder usually give unreliable and inconsistent information in every method of interview, therefore, repeating interviews in subsequent occasions together with randomly biological tests will help providers gather more accurate information.

### ***Risky Behavior in Adolescents***

Adolescent morbidity and mortality are largely associated with high-risk behaviors including violence, suicide, sexual activity, pregnancy, bullying, and drug abuse. Adolescents who have risky behaviors choose to hide these issues from adults or their parents but will discuss and share them with their friends. Therefore, researchers hypothesize that computer-friendly technologies

may help health care providers uncover these problems. A study from Turner et al. [36] comparing audio computer-assisted self-interviewing (ACASI) to the paper-pencil self-report found that males aged 15 to 19 were much more likely to report risky behaviors when they were interviewed with ACASI technology than when reported via traditional means.

The percentage of adolescent reports were found to be higher for injected drug uses, cocaine use and sexual activity with drug uses than the estimate derived from the federal government's 1995 National Household Survey on Drug Abuse [37].

For sexual behaviors, ACASI produced highly significant increase in reports of male-male sexual relationship but had little effect on male-female sexual relationship report.

For violent behaviors, respondents who were interviewed in ACASI mode were more likely to reveal that they had had carried a gun, a knife or razor more than in paper self-reports. This study is corresponding to Paperny et al. [38] who reported that computer-assisted interviews elicit more positive responses to sensitive high-risk problems of adolescents than a matched written questionnaire. However, in this study, only one group of adolescents who were interviewed by computer interviews was assigned to discuss with the doctors about their printout results even though nearly all of the subjects were willing to share the printout result with the pediatrician who should facilitate clinical evaluation.

Chisolm et al. [39] used the Health e-Touch system to evaluate youth in terms of substance use, depression and suicidal thoughts reported that although adolescents were satisfied with the technologies, satisfaction does not show statistical correlation with the report of risky behaviors. The authors also mentioned that the reports of risky behavior from adolescents needed further evaluation by physicians because the screened positive results may include false positives and the physician is the only person who can make a final decision for those screened positive on whether the screening result is valid or whether follow-up care is

needed. The authors suggested this because in their study they found that 35% of participants reported to the computers that they had suicidal idea, depression and substance use. This prevalence was far more than the usual prevalence of depression which is 5-10% plus prevalence of suicidal attempt which was 11.3/100,000 [40] plus prevalence of substance disorder which was approximately 10% [41] Therefore, increased reports from adolescents for risky behaviors may not be the true numbers.

Positively screened adolescents need to be verified by a physician. Although it seems that computers can elicit sensitive problems from the patients, the doubt about preciseness and reliability of the elicited information from the computer still exists.

#### ***Criteria for Comparison of Computer Interviews with Face-to-Face Interviews in Terms of Preciseness and Reliability***

Preciseness means the quality of being reproducible in amount or performance. Reliability means the quality of being dependable or consistent. According to these definitions, one may conclude that computer interviews are 100% reliable; computers never forget to ask a question, give the same pattern of responses to a client, and always ask the same questions in the same way [42]. Even using structured interviews, clinicians accidentally omit up to 5% of required questions [43]. In addition, computer interviews do not get tired, angry, or bored. It is always willing to listen and give the same response irrespective of the time of day whereas a human providers' response may vary based on their energy level, diurnal variation, the information that they receive from patients or their personal issues [35]. Therefore, the quality and standard which is given by the computers sometimes is higher and more accurate.

Using this definition, in order to reach more preciseness, computers should get enough information when they are used for interview in each time. Thus many circumstances such as participants, interviewing topics and programmed computer interviews could

influence the preciseness of computer interviews' results. Young people and adults may report more experiences to computers than to interviewers on sensitive topics such as sexual experience and substance misuse [36] because the computer provides a sense of privacy and sense of control where older people or people who have computer aversion or technophobia may report less experiences and have negative attitude to computer interviews [44].

In terms of topics, patients who are interviewed with computers report more stigmatizing behaviors [35, 36, 38] such as illicit drug (except alcohol) uses, sexual relationships, especially male-male sexual relations and suicidal behaviors while face-to-face interviewing elicits more in-depth "psychological distress" in any issues such as sexual problems, alcohol uses, suicide etc. This indicates that computer interviews may not be preferable in all interview situations. In terms of the program for interviews, one study from Dove et al. 1977 [45] showed that properly designed questions could make patients more eager to answer further questions and to talk about themselves because it can induce a mood of introspection and facilitate expression. When the patients explain or give more information about them, the preciseness of the interview is increased because computers can gather enough information to form a diagnosis. Furthermore, a new technology, an audio program, for example, can facilitate and help patients who are illiterate to have more response with graphics and presentations on the computer screen which create enjoyment and ease and thus make patients feel more comfortable and increase their interview cooperation.

On the other hand, although human error in interviews may be somewhat higher, the error is still in an acceptable range [8, 25]. Furthermore, a face-to-face interview has higher benefits because it allows more extensive probing and clarification of the subject's responses [25]. The interviewer can go beyond the limiting structure of a psychological instrument and explore in-depth the patient's difficulties and specific issues. In addition, the flexibility of the human interview can pursue a vast range of patient facts

and adjust the interview inquiry to the uniqueness of each patient and can turn in a hundred different directions, following leads in a way that computer procedures cannot [46].

Attitude and acceptance of patients could encourage the cooperation and compliance which lead to more accurate information in the interview while the providers' attitude could facilitate the use and development of computer interview software. Therefore, exploring the attitude of stakeholders is important to predict the present and future use and development of computer interviews.

### ***Patients' Attitude***

From many reviews, in sensitive areas as shown in many studies above, some patients find it easier to provide information to the computer, are often more honest with the computer, and often prefer the computer over the clinicians because computer interviews also have the potential for being less uncomfortable or embarrassing to them, especially when sensitive information such as thoughts of suicide [30], sexual behaviors [15, 26, 27], or other psychological problems [20] are being revealed. In addition, in patients' perceptions, even the best clinicians will react emotionally to some of their feelings and statements which may lead to inadvertent communication. However, this interpretation of clinician's reactions may also come from patient's thought distortion from their own psychiatric illness. For example, patients who are narcissistic may be sensitive to rejection, disapproval or indifference of the interviewers. Therefore, if these people's thoughts are not recognized as important by the clinicians, they might not cooperate with the interviewers.

Furthermore, even if the clinician is non-judgmental, a patient may feel embarrassed because status differences exist between a professional and someone who is seeking help. This situation could consequently inhibit a patient's honesty and openness. To sum up, clearly majority of respondents report positive attitudes. Even then, some individuals do not like the idea of a computer interview and many



individuals who are receptive to computer interviews would not want them used in every circumstance [8, 47, 48].

### ***Health Professional Attitude***

The most common impediment to the acceptance of computer interviews among professionals is the loss of human interaction using computers and therefore skepticism of the judgments of the computer compared to human judgment. Secondly, the lack of computer skills of health care providers can also be an impediment.

In terms of the impersonal nature of computers, it is interesting that these concerns are invoked much more frequently by professionals than by patients even though the consistent finding of many researchers is that computer interviewing is highly acceptable to patients [8, 48].

In the providers' view, the impersonal nature of computers may impede rapport building, which, therefore, leads to unsuccessful interviews and unsuccessful information gathering. Moreover, some providers think that using a computer in the interview seems to be a fraud to the individual because it implies that the computer understands the person by showing an acknowledging sentence to him or her, even though it is not [49]. Computers have difficulty in understanding other circumstances apart from structured and verbal information, which they are programmed. Here, human interviewers have a great advantage over them in the number of informational modes because of the human ability in the use of natural language and nonverbal information may point to areas where the useful information is and which is the proper direction to go. Furthermore, computers are relatively unable to tailor the wording of questions. Some variation is possible, but the computer is still extremely limited compared with the flexibility and spontaneity of human language [50]. In addition, computer judgment has less value than clinical judgment because first, clinical judgment of physicians can indicate a failure to standardize medical diagnosis. Therefore all clinical judgments could be considered a standard. Second, clinical

judgments are necessary when assessing something, which is impossible to describe in a standardized fashion [51]. This means that if there are any conflicts between computers and human judgment, human judgment is used as a standard. Lastly, the low computer skills of health care providers, in terms of their proficiency of use would impede the application of the computer interviews in their clinical settings and future research [52].

Much of the developmental work in computer interviewing reveals that patients prefer computer interviews rather than human interviews for revealing their sensitive issues. However, computer interviews are not appropriate for all patients and for all conditions since some patients raised that they still needed to talk or discuss with their providers who could evaluate their interview results and, in some conditions due to the inflexibility of computers, they cannot select to probe or extract other relevant issues beside their programmed questions. Moreover, computers are extremely weak in value of clinical evaluation and judgment while a clinical judgment is always of higher value than computer judgment. Furthermore, there is not enough study to support that computer interviews gather genuine high quality or high quantity data since there may be some false positive values integrated in increased report data from computer interviews. Therefore, the use of psychiatric computer interviews should be recommended to use undersupervision of mental health professionals.

### ***Hope for the Future***

There are two contrary theories about the future of computer interviews. The first theory believes that the programmed computer interviews may be useful if the programs are smaller and more comprehensive. Thus, the narrower the task, the greater the strengths are of the computer interviews. Even if it is possible to write computer interviews that cover a large content area well, there may be problems in getting it used because different clinicians will still want to tailor the program to meet their own particular requirements. Obviously, the larger and more comprehensive a program is, the more difficult it

is to modify so it is our belief that smaller scale interviews are more likely to be successful than larger interviews, and one ultimate goal is to integrate these smaller components into more comprehensive packages [53]. This belief regarding computer interviews parallels experience in the development of mental health information systems. Hedlund et al. [54] have noted that large mental health information systems have been generally unsuccessful, and the trend has been toward more narrowly focused systems. However, this assumption should be weighted with flexibility because if the interview is to be focused, it still cannot overcome its present limitations, which leads to a problem of clinician acceptance.

The second theory believes that computer dialogue interviews may offer a useful application if it has more flexibility and it resembles the real doctor-patient interview rather than structured interviews. In the future, artificial intelligence (AI) could be a tool of choice to implement this kind of program [49]. However, if dialogue will be used, the content will be large because the AI will be programmed to communicate both verbal and non-verbal language while it needs to come up with many choices and directions of responses with a level of appropriate language in each person in order to make patients feel like they are in a real interview with a human. Therefore, further research in both models are needed in order to conclude which one is more beneficial.

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**Corresponding author: Wachiraporn Arunothong, M.D., 2 Prabat Muang Lampang, 52000 Thailand.**

**Email:** wachira\_arun@lph.go.th

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## CASE REPORT

# A CASE OF CONVERSION DISORDER ASSOCIATED WITH AN ARACHNOID CYST

*Bidaki Reza\*, Amin Masoud\*\**

**\*Medical Doctor, Assistant Professor of Psychiatry. Rafsanjan University of Medical Sciences; \*\*Medical Student, Rafsanjan University of Medical Sciences, 7713961151, Rafsanjan, Iran.**

## Abstract

**Objective:** This case report highlights arachnoid cyst, a rare benign space-occupying lesions (SOL) formed by an arachnoid membrane containing cerebrospinal fluid (CSF) which in most cases, are identified by accident. Conversion disorder is characterized as a deficit or distortion in neurological functioning, or symptoms suggesting a general medical condition that is not referable to an organic lesion. **Methods:** We report a case of a 24 year old woman who came to a psychiatrist with history of suicide attempt. She had a history of failed marriage but no history of substance abuse. She had a history of dizziness, light-headedness, blurred vision, seizure and headache for a while. Seizure was identified to be pseudo seizures in further assessments. **Results:** Diagnosis of Conversion Disorder with Adjustment Disorder was revealed. In Barin Computerized Tomography (CT) scan there was an extra axial cystic lesion with the height, frontooccipital and lateral size of approximately 6.4 cm by 4 cm by 2.5 cm respectively in the left anterior middle fossa and Sylvian fissure. Based on patient's history, the arachnoid cyst and its symptoms may have a synergistic effect on patient's symptoms of conversion disorder. **Conclusion:** This case reflects the importance of ruling out medical problems in patients with psychiatric symptoms. *ASEAN Journal of Psychiatry, Vol. 13 (1): January – June 2012: 81-85.*

**Keywords:** Conversion Disorder, Arachnoid Cyst, Case Report

## Introduction

Arachnoid cysts are rare, benign space-occupying lesions formed by an arachnoid membrane containing cerebrospinal fluid (CSF). In most cases they are identified by accident [1]. It represents 1% of all non-traumatic intracranial expansive processes. It can lead to compression of the surrounding parenchyma and obstruction of efficient flow of cerebrospinal fluid the symptoms depends on its size and location of the lesion. The most common symptoms include headache and seizures. The most popular treatment for this lesion is surgery indicated the

presence of hydrocephalus or intracranial hypertension [2].

Conversion disorder has been used instead of “hysteria” in newer version of classification systems (DSM-IV and ICD-10). Conversion disorder is characterized as “a deficit or distortion in neurological functioning, or symptoms suggesting a general medical condition that is not referable to an organic lesion”. Presentations can encompass any nervous system activity that is somewhat spontaneous and this include psychogenic dementia [3]. Although the diagnosis of

conversion disorder is controversial but there is no doubt that it causes significant disability [4].

It is improved that there is a relationship between mental and physical symptoms. Although symptoms suggesting conversion disorder are not referable to an organic lesion but medical disorders must be included in all psychiatric disorders. Existence of current or previous comorbid neurological disorders in diagnosed conversion disorder patients is reported to have an evidence of 18% to 64% [5].

The prevalence of arachnoid cysts is significantly elevated in psychiatric patients, indicating a probable causal link between arachnoid cysts and psychiatric disorder [6]. It is mostly reported in psychotic patients [1, 7-11] and there are a few reports of coexistence of arachnoid cyst and conversion disorder [12].

We report a case who presented to the psychiatrist with suicide attempt that has neurological symptoms simultaneously.

### **Case Presentation**

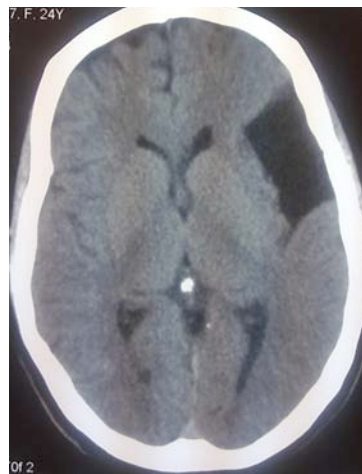
A 24-year-old woman was presented to the psychiatrist with history of a suicide attempt. She also had a history of suicide attempt by hurting herself. She suffered recurrent major depression following a failed marriage and divorce one year ago. Her parents also had been divorced. Patient had weight loss, anorexia and insomnia. She had a history of dizziness, light-headedness, blurred vision, seizure and headache for a while. Perinatal and childhood history was uneventful. Substance history was negative. Family history of any psychiatric disorder was

negative. She was admitted in hospital in an aggressive state and high risk of self-harm. She had been sitting on her bed and sleeping all day long. She had tied her scarf around her head and complaining of headache.

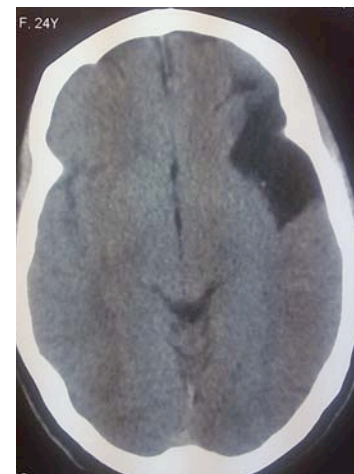
Detailed physical examination revealed neither clinically significant neurological. It is through observation or radiological texts demonstrated that her seizures were pseudo seizure. Blood pressure was 110/65mm Hg in supine position without any postural fall. Laboratory studies were negative for any physical illness. Fundus examination, ECG, and x-ray of the cervical spine did not reveal any abnormality.

Patient had gained a huge amount of attention at her previous suicide attempt. At that time she had dizziness and headache. She was walking and talking in the ward most of her time. She had a depressed mood and complained of somatic symptoms affected patient's function and activities. Patient was diagnosed as conversion disorder accompanied by an adjustment disorder. She was treated with Citalopram (tablet 20 mg, 1/day), Trifluoprazin (tablet 5 mg 1/day), Clonazepam (tablet 1 mg, 1.5 tablets/day at the time of sleep), Gabapentin (tablet 100 mg, TDS) and Sodium Valproate (tablet 200 mg, BID) together with psychotherapy.

A brain CT scan revealed an extra axial cystic lesion with the height, frontooccipital and lateral size of approximately 6.4 cm by 4 cm by 2.5 cm respectively in the left anterior middle fossa and Sylvian fissure that was most likely to be an arachnoid cyst.



**Figure 1:** A brain CT scan revealed an extra axial cystic lesion in the left anterior middle fossa and Sylvian fissure suggestive of an arachnoid cyst. (Left)



**Figure 2:** The Arachnoid Cyst had penetrated to ipsilateral Sylvian Fissure. (Right).

At the time of discharge, patient had mild depression but no self harm behavior. She was

referred to neurosurgeon for excision of the cyst.



## Discussion

This case report discusses the possibility of a causal relationship between the CT scan - identified lesion, the somatic symptom, and conversion disorder. It is now approved that there is brain functional defects in most of psychiatric disorders. In a study there were psychiatric disorders in 7 cases of posterior fossa abnormalities containing 2 cases of somatoform disorders [13].

Our knowledge about arachnoid cyst is limited. They mostly have congenital origin [14] and are commonly discovered incidentally during imaging processes for unrelated symptoms or post-mortem during autopsy [15]. Some articles suggest that there is an etiologic relationship between arachnoid cysts and psychiatric disorders [9]. Since the coexistence of arachnoid cyst and conversion disorder is rare [12] and diagnosis of conversion disorder itself is controversial it is difficult to be absolutely certain that lesion had effect on the patient's psychiatric symptoms or not. Although there must be no neurological defect to make diagnosis of conversion disorder but a significant number of researches determined functional defects in related areas of brain [4]. In a study using PET to compare three patients

with weakness due to a conversion syndrome with both normal controls and controls instructed to feign weakness, patients with conversion syndrome showed hypoactivation of their left dorsolateral prefrontal cortex (LDLPFC) during a simple motor task whereas others showed normal function [16]. Based on this patient's history that she had no family history of psychiatric disorder and the severity of somatic symptoms increased at the second time and patient had got relative remission that was less than expected level we can say that arachnoid cyst and its symptoms may had a synergism effect on patient's symptoms of conversion disorder.

As noted in other studies arachnoid cysts may cause symptoms including headache and seizures and mild Cognitive disorders such as deficit of memory and control functions in neuropsychological tests [9, 17-19].

## Conclusion

The most important outcome from this case is the importance of ruling out medical problems in patients with psychiatric symptoms. Some lesions might remain undetected in coverage of normal physical and neurological examinations and laboratory findings and patient might



undergo processes that even could be dangerous and life threatening. This patient had undergone electroconvulsive therapy (ECT) in the past, and this contraindicated in arachnoid cyst. The close collaboration between neurologists, consultation-liaison psychiatrists, psychologists, and general practitioners is necessary to gain most effective results of treatment.

***Deceleration of interest:*** None

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**Corresponding author:** *Amin Masoud, \*Medical Doctor, Assistant Professor of Psychiatry, Rafsanjan University of Medical Sciences; \*\*Medical Student, Rafsanjan University of Medical Sciences, Rafsanjan, Iran.*

**Email:** Prma1367@gmail.com

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## CASE REPORT

# MANAGING AGGRESSIVE PATIENTS - WEST PARK HOSPITAL EXPERIENCE: A CASE REPORT

*Hashim Mohammed\*, Adnan Zafar\*, Roohi Rashid\*\*, Jawad Sultan Raja\**

*\*Mental Health Services for Old People, Tees, Esk and Wear Valleys  
NHS Foundation Trust; Stockton on Tees, DL2 2TS, United Kingdom;*

*\*\*General Practice Specialty Trainee, Tees Valley Vocational Training Scheme,  
Queens Campus, Stockton on Tees, TS 17 6BH, United Kingdom.*

## Abstract

**Objective:** Newly qualified doctors on the wards are sometimes faced with difficult situations and difficult patients on the wards. We report a case and provide insight into management of these patients. **Methods:** This was only second week into the job. This patient was admitted to psychiatry ward from medical assessment unit because of acute episode of psychosis. **Results:** The patient was given some medications along with physical restraint. He was first given haloperidol and then lorazepam. He settled after these medications. He was thoroughly assessed by a multidisciplinary team headed by the consultant next day. He was diagnosed as brief psychotic disorder. He stayed on the unit for some time and was then discharged home on regular antipsychotic. He was booked into 1 monthly clinic and was given community support as well. **Conclusion:** Aggression can happen for a variety of reasons, i.e. acute psychosis and mania. Management varies according to the diagnoses. Physical restraint and medications form an essential part of management. However it is of utmost important to rule out medical causes of aggression. Substance abuse is the most common cause of aggression in developed countries. *ASEAN Journal of Psychiatry, Vol. 13 (1): January - June 2012: 86-90.*

## Introduction

This article is aimed at helping junior doctors develop a structured approach towards managing these patients. It looks at organic and non organic causes and how they should be managed. We have discussed two important drugs i.e. lorazepam and haloperidol in detail. Sometimes after giving these medications, patient can develop serious side effects which may cause anxiety among junior officers. In this article we briefly touched on how to manage these complications.

## Case Report

A 65 years old male was admitted to the acute

assessment unit of a medical ward with an episode of confusion and strange behavior. He was reported to be having delusions for the last 2 days at home. On the medical ward he had baseline investigations to look for the cause of the confusion. This included detailed physical examination, infection markers, electrolytes, drug levels and a chest-X-ray. All of the results were normal. He was then referred to the psychiatric team. Mental state exam was performed by a junior psychiatric doctor and found to be delusional. He was taken to a psychiatric ward for continuing care and diagnosed as suffering from acute psychotic disorder. Detailed history on psychiatric ward revealed positive history of schizophrenia in patient's parents but nothing else in history was

significant. He was started on quetiapine and put under close observation. Forty-eight hours into admission to psychiatry ward; he became very aggressive on one of my shifts. A registrar was consulted and advised us to give a dose of parenteral haloperidol and reassess him after some time. He had to be physically restrained and needed a dose of lorazepam on top of haloperidol which was given. The combination eventually calmed him down. He was closely observed for the rest of the night by ward staff. Fortunately there was no further mishap. His final diagnosis was brief psychotic disorder and after a stay of 3 months on the psychiatry unit, he was discharged home on optimized doses of antipsychotic. Follow-up was arranged and community support was put in place.

## **Discussion**

Aggression in humans describes a variety of human behaviors i.e. verbal aggression, being physically aggressive to humans or animals and physical aggression against objects. The other term commonly used is violence which is denoted by one person's physical aggression against another human. Causes of aggressive behaviour include medical, substance abuse (intoxication and withdrawal), dementia, personality disorder (antisocial) and psychiatric causes. Some common medical causes in aggressive patients are brain injuries, brain tumor, metabolic disturbance and epilepsy. Important psychiatric causes are schizophrenia, mood disorders and anxiety disorder [1].

It is important to assess the patient systematically. Three steps are very useful for structured assessment. First is taking history about the person's past and current behavior from care, family, friends and patient's doctor. Second is evaluating past treatment of the patient whether it was successful or not. Last but not the least is physical examination of the patient to look for any medical cause i.e. pain, infection, self harm or injury. In a patient with acute agitation with unknown history, it is important to rule out medical emergency like delirium which is a reversible condition of confusion and sometimes aggression, due to a medical cause [2]. In this situation, it is

necessary to mechanically restrain a patient from self-harm. Once an acute episode is managed, strategies are devised to prevent or reduce the intensity of such episode in future. Next is physical examination along with abbreviated mental state examination mostly used in acute hospital settings by asking 10 questions. Aggressive behavior in a ward may be caused by crowding and, nursing staff showing commanding behavior or under involvement of medical staff with regard to ward activities. Patients may be vulnerable in a particular period of the day, peak problem period of 7:00-9:00 am. Patients who are briefly violent show better response to typical neuroleptic medication. They have less neurological impairment than persistently aggressive people.

Patients with medical conditions are not normally known to be violent. Head injuries, brain tumors, metabolic conditions and epileptic patients can show aggressive behavior due to neurohumoral mechanisms. Physical assessments involving laboratory and imaging investigations should be used to diagnose and manage these conditions.

Alcohol, cocaine, phencyclidine (PCP), or amphetamine intoxication is the common substances of misuse guilty of causing aggression. Water, caffeine, antihistamines and aerosols intoxication in the inpatient settings are important to consider. Withdrawal from substances can also lead to aggressive behavior. Management should be done by specific treatment for the substance of misuse and involving social services along with psychiatric input. Schizophrenic patients are mostly not aggressive [3]. Their aggressiveness is the result of noncompliance with medications. A hint to diagnosis is worsening of psychotic symptoms. In recent studies, 24-44% of aggressive acts committed with schizophrenics occur during an acute phase of the illness. Neuroleptic blood levels have been found to be inversely connected with violent/aggressive actions in these patients. Patients need to be treated by psychiatrists by augmenting a particular treatment, introducing a new treatment or reducing some drug therapy. Unfortunately dementia patients have poor impulse control. Cognitive impairment for more

than 6 months and assessment of memory functions establishes the diagnosis. These patients are best treated in psychiatric settings. In antisocial people, intimidation of staff or patients and material gain activities may be factors in antisocial personalities. These patients along with mood disorder patients should be referred for psychiatric assessment and management.

Treatment can be discussed under 2 headings. This includes non-pharmacological treatment and pharmacological considerations.

Non-pharmacological treatment revolves around some basic principles [4]. Firstly look for possible environmental hazards. (e.g., objects that can be thrown or used as a weapon). Then evaluate physical conduct of the patient (e.g., patients point towards staff or other patients make a fist before punching or kicking). All staff must be aware where the patient is at all times (e.g., do not turn your back to the patient; do not leave the patient alone and therefore unobserved). Verbal threats should be taken

seriously. One should distance several feet away to avoid crowding the patient. Calm, confident, competent demeanor is vital for successful de-escalation. De-escalation can be done by engaging the patient in conversation. We must avoid arguments between staff members in front of the patient. At least 4 people should be available if there is a need for restraint.

Some of the drugs used for treating aggressive patients are lorazepam, haloperidol, olanzapine, zuclopenthixol, risperidone, quetiapine, lithium, sodium valproate and beta-blockers. Before starting treatment consider the type of aggressive behavior presentation i.e. if a patient is aggressive due to a psychotic illness, it is recommended to start the patient on antipsychotic treatment and then commence on a tranquilizer like lorazepam. The other thing is to start from a lower dose towards a higher dose and giving appropriate intervals between medications to give that particular medication time to settle in the system [5].

<b>LORAZEPAM</b>	<b>HALOPERIDOL</b>
<u>Indications</u> Acute aggression of unknown etiology	<u>Indication</u> Aggression on a background of psychotic symptoms
<u>Peak-concentration</u> Oral-2 hours IM-60 to 90 minutes	<u>Peak-concentration</u> Oral-2 to 6 hours IM-15 to 60 minutes
<u>Side-effects</u> Ataxia, Nausea, Vomiting Rebound insomnia	<u>Side-effects</u> Extra-pyramidal side-effects, dystonia, stiffness, dry mouth, constipation, blurred vision
<u>Caution</u> Respiratory depression Reduced conscious level	<u>Caution</u> Neuroleptic malignant syndrome (increased temperature, body stiffness, respiratory depression)
<u>Dose</u> Oral 1-2 mg, Max Dose-4mg IM= 1-2mg	Oral 3-5 mg, Max dose-30 mg IM 3-5 mg, Max dose-18 mg

The medications mentioned other than these 2 should only be used with psychiatric advice preferably in a psychiatric setting.

**Remedial measures in rapid tranquilisation**

PROBLEM	REMEDIAL MEASURE
Acute dystonia Acute laryngeal dystonia	Give procyclidine 5-10 mg IM or IV Administer oxygen, administer 5-10 mg IM or IV procyclidine, call emergency medical team
Reduced respiratory rate i.e. <10/min or Oxygen saturations, 90 %	Give Flumazenil if benzodiazepine induced respiratory depression. Flumazenil should be given 200 micrograms IV over 15 seconds then 100 micrograms every 60 seconds as required. Usual dose 300-600 micrograms. Maximum dose is 1 milligram
Irregular or slow pulse <50/minute	Immediate ECG, cardiac monitoring, blood pressure monitoring
Fall in blood pressure. Diastolic <50 mmHg	Lie patient flat, tilt bed towards head or raise legs Fluid resuscitation
Increased temperature	Withhold antipsychotic until creatinine level is checked. Keep patient cool and seek further medical advice

Successful management of aggressive behavior revolves around treatment of underlying cause. Careful assessment, leading to a correct diagnosis, prompts treatment selection. Non-pharmacological management is vital for patients as well as staff safety. Pharmacological treatment mostly involves lorazepam for aggression due to unknown disorder whereas haloperidol is widely used for aggressive patients with psychotic disease. Mood stabilizers, such as lithium or valproate are also used in patients with schizophrenia, typically as adjuncts to antipsychotic treatment to decrease the intensity and frequency of agitation and poor impulse control. However, they have not been studied extensively under double-blinded placebo-controlled conditions. Delirium is a medical emergency and it needs aggressive treatment. It is important to keep in mind that psychiatric input for current as well as future management is part of the plan of treatment for these patients.

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**Corresponding author: Dr Adnan Zafar, 91 Ingleby House, Marton Road, Middlesbrough, Teesside, United Kingdom, TS43TF.**

**Email:** [adnan157@doctors.org.uk](mailto:adnan157@doctors.org.uk)

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## CASE REPORT

### A CASE REPORT OF *DHAT* AND *KORO*: A DOUBLE JEOPARDY

*Gurvinder S Kalra\**, *Aniket Bansod\*\**, *Nilesh B Shah\*\*\**

**\*Assistant Professor, Department of Psychiatry, Lokmanya Tilak Medical College & Sion General Hospital, Mumbai 400 022, India; \*\*Resident Trainee, Department of Psychiatry Lokmanya Tilak Medical College & Sion General Hospital, Mumbai 400 022, India; \*\*\*Professor and Head, Department of Psychiatry, Lokmanya Tilak Medical College & Sion General Hospital, Mumbai 400 022, India.**

#### Abstract

**Objective:** Culture-bound syndrome is a term used to describe syndromes unique to certain cultures. We need to understand the origins of cognitions related to these syndromes. **Methods:** We present the case report of a patient with *dhat* syndrome and *koro* with no other psychiatric disorder. **Results:** The cognitions related to these two distinct culture-bound syndromes in our patient seem to have their origins from different sources. While those related to *dhat* anxiety are peer-group induced, the one related to *koro*-like symptoms seem to have been affirmed by an alternative medical practitioner. **Conclusion:** Mental health professionals dealing with patients having culture-bound syndromes need to get to the core of origin of various cognitions and beliefs that such patients bring into the consultation rooms. *ASEAN Journal of Psychiatry, Vol. 13 (1): January – June 2012: 91-95.*

**Keywords:** Culture Bound Syndrome, *Dhat* Syndrome, *Koro*, Semen Loss Anxiety

#### Introduction

Culture-bound syndrome refers to recurrent and locality-specific patterns of aberrant behaviors and troubling experiences that may or may not be linked to a particular DSM-IV diagnostic category [1]. *Dhat* syndrome and *Koro* are the two culture-bound syndromes presenting with themes related to an individual's genitals and sexual life, reported from the Indian subcontinent. *Dhat* or semen-loss anxiety syndrome consists of somatic symptoms of fatigue, weakness, anxiety, loss of appetite, and symptoms of sexual dysfunction attributable to loss of semen following nocturnal emissions, masturbation or loss through urine [2]. *Koro* is a culture-bound syndrome characterized by intense anxiety and a belief that the genitals will retract into the abdomen and result in death [3].

Both these syndromes can occur independently in a patient or can present with other comorbid psychiatric disorders. We present a case report of a patient who presented with symptoms of both *dhat* syndrome and *koro* with no other psychiatric morbidity. A striking feature of this case was the reconfirmation of the *koro* beliefs in the patient by an alternative medical practitioner.

#### Case Report

A 32-year-old male patient, educated up to the 6<sup>th</sup> grade, married for 11 years, came to psychiatric outpatient department with complaints of feeling a stretching sensation at the base of penis for the past 5 years that had worsened over the past 3 years and a feeling that his penis is 'getting buried' into the abdomen for



the past one year. Five years before the patient first presented to us, he started complaining of an itching sensation around the base of his penis and a yellowish discoloration of the skin in the region. He first consulted a dermatologist within a fortnight of onset of these symptoms. Regular use of oral medications (details not available) and some local applications prescribed by the dermatologist did not provide relief to him after 2-3 months. The patient was then advised to undergo some procedure by the same doctor that involved piercing needles in the skin around the penis following which he perceived complete relief of both itching and discoloration. This improvement persisted for around 2-3 months following which he started experiencing some stretching and pulling sensation in his penis, the pulling force directed inwards towards his loins. Although these symptoms were continuous, they did not interfere with his sexual or other physical activities, as a result of which he neglected them.

During this period, patient migrated to Dubai for work in 2006, the symptoms still being persistent but neglected by him. In Dubai, he worked as a chauffeur that involved around 10-12 hours of driving within city limits; he said that he would get sufficient time to rest intermittently in his work hours. He returned to his family in 2008. During his stay with his wife, after 8-10 days of daily intercourse, he started perceiving that the strength of his erections and penile length had decreased slightly. Along with this the earlier stretching and pulling sensations had also increased. All these complaints were making him anxious and sad. Since he had to go back to Dubai again, he did not consult a professional and instead went back, only to return a year later. During his stay in Dubai, his concerns over the decreasing length of his penis were disturbing him although they did not affect his socio-occupational functioning to a large extent. On his return, his symptoms increased for which he consulted an alternative medical practitioner (*Ayurvedacharya*). He was started on some traditional treatment by this practitioner that comprised of daily visits to his clinic with local application of some medicine over the penis followed by wrapping it with a wet cloth and

some plant leaf for a few minutes. In addition to this, he was also advised local application of some oil over the penis twice a day.

During interview the patient revealed that at his first visit to the *Ayurvedacharya*, the practitioner claimed that if he had not consulted him on time, his penis would have shrunk, and completely retracted and disappeared into his abdomen. Patient had spent approximately Rs. 60,000/- on the treatments that this physician had advised but was happy that his symptoms had completely abated although his penis did not return to the earlier size.

Currently, for the past one year, he again started feeling that his penis including the scrotum is shrinking and reducing in size. Almost daily, he would measure the length of his erect penis with his palm (no tapes or rulers used); he never measured the penile girth, though on enquiry he reported that it had also reduced to some extent. He also accepted of sometimes applying a pulling-out pressure on his penis in order to prevent it from shrinking but this did not work and somehow made him even more anxious. At this time he also felt an increase in the pulling sensation around the genitals towards the loins. Patient reported of feeling anxious and depressed and was not able to concentrate on his work and life in general. He had never discussed this problem with anyone including his wife. He complained of occasionally having comparatively weaker erections, but did not report of totally failing to achieve or sustain erection for the duration of sexual intercourse. There was no history suggestive of any other sexual dysfunction, or urinary tract infection.

On asking if he was concerned about anything else, he complained of passing semen in urine and having night-falls since around the same time period. He complained of weakness, easy fatigability, body aches, and loss of power in his *penile blood vessels* due to loss of semen and was concerned that this may result in impotence. His anxiety had increased due to having so many problems related to his sexual organs, although this did not seem to affect his sexual life to a large extent. He did complain of not being able to satisfy his wife like before, as his wife was

complaining that he was not as actively performing as before and that his erections were also not as hard as before. Apart from this, his wife did not complain anything to him as far as his sexual performance or penile size was concerned. The patient denied resisting any of these thoughts unlike obsessions and also claimed that both these symptom of anxiety over shrinking genitals and anxiety over losing his *dhat*, although started around the same time, were not related to each other in any way and that they were independent. He denied of feeling that he was losing his genitals because of losing his semen over a time-period.

Though he gave history of feeling sad and being unable to concentrate on his work on occasions, he denied of having other depressive features. There was no history suggestive of any other psychiatric, medical or surgical illness in the patient. A dermatological evaluation did not reveal any local infection. His mental state examination revealed intense anxiety over his reduced penile size and a fear that he will lose his masculinity once this happened completely. There was also an overvalued idea of losing his vigor and vitality due to semen loss in urine or night-falls (nocturnal emissions or wet dreams).

He was given the diagnosis of *koro* and *dhat* syndrome. He was given low dose clonazepam (0.25 mg BID) to tide over his anxiety and was taught relaxation exercises. He was subsequently followed up over several sessions that included educating him about the impossibility of the genitals shrinking and retracting into the abdomen. He was told about the benign nature of his symptoms and reassured. He was told how anxiety related to sexual matters could be reinforcing leading to further increase of his problems. Informing him that his symptoms of *koro* could best be explained as anxiety based beliefs that are modeled and communicated among vulnerable men also helped tide over his problems [4]. After the patient was satisfied with the explanation about his *koro*-like symptoms, his misconception about semen-loss was cleared over subsequent sessions that included psycho-education along with educating him about anatomical and physiological aspects. He is still following up with us on a regular basis over the last 6 months and is showing sustained

improvement in all his symptoms. His clonazepam was tapered off and stopped completely as he reported improvement in anxiety symptoms.

## Discussion

This case clearly presents with two clinically distinct culture-bound syndromes that have similar underlying themes related to sexual organs and present as anxiety related to loss of sexual capacity as a result of both. *Koro* may be *primary* (either sporadic/epidemic form), in which genital shrinking is the only presenting complaint, and *secondary*, in which the presentation is comorbid with another psychiatric disorder (anxiety disorder, schizophrenia, depression), diseases of the central nervous system such as brain tumors and epilepsy [3,5], chronic abuse of amphetamine [6], cannabis [7], and alcohol [8]. With all secondary causes ruled out, our case appeared to be that of primary *koro* with co-morbid *dhat* syndrome. *Koro*-like symptoms have been documented in marital conflicts [9]; in our case there were no marital conflicts reported though it is worthwhile to note that he was a migrant worker and was frequently staying away from his family. There was no history of extramarital intercourse or any venereal disease in him, though these may be found commonly in *koro* patients [10].

Although our patient started feeling that his genitals were shrinking long before, his beliefs seem to have been further strengthened by the *Ayurvedacharya* and his wife who complained of reduced sexual satisfaction with him. Khubalkar and Gupta (1984) [11] suggested that *koro* is a learned phenomenon, which results in an insecure person by occasional exposure of such ideas by reading, hearing, or witnessing a case. In our case *Koro*-like symptoms appeared earlier but were asserted by the *Ayurvedacharya*, which led him to really believe that his genitals were shrinking.

Our patient had anxiety over both loss of semen through nocturnal emissions and also his shrinking genitals, but was more concerned and disturbed about the latter, since losing the

genitals was more frightening for him. It was interesting to know that our patient had discussed the issue of semen-loss with his peer-groups earlier and knew of other friends who complained of loss of vigor and vitality due to semen-loss; however he did not know of any other individual who shared his complaints of shrinking genitals, nor had he discussed this with anyone else. His 'strange' complaint of shrinking genitals prevented him from talking about it to anyone thus making it more secretive and almost chronic, lasting for around three years.

During psychotherapy sessions with him, his anxiety over shrinking genitals was targeted before his anxiety over semen-loss as the former was more worrying to the patient and hence warranted immediate attention. Dutta (1983) [12] has reported that *koro* can be cured by suggestion; the *koro* epidemic of Assam in 1982 was helped by focused public education by mass media [13]. His semen-loss anxiety was later dealt, by educating him about the physiological aspects of sexual organs and semen production. It has been shown that psycho-education and removing misconceptions about semen-loss help to effectively deal with *dhat* syndrome [14]. Both his symptoms abated following psycho-education over several sessions. Since it was observed that the patient only sought treatment for his problems while he was away from work (i.e. in India), he was advised to seek treatment for his problems as and when they arise and not let them become a chronic problem for him.

## Conclusion

This case presents an interesting confluence of two distinct culture-bound syndromes related to sexual organs in a single patient. The patient presented primarily with an intense anxiety about the shrinking of his genitals and also loss of vital energy due to semen-loss during nocturnal emissions. His semen-loss anxiety seems to have been borne out of the belief system shared with his peer group; on the other hand, his belief about shrinking genitals seems to have been furthered by the alternative medical practitioner who confirmed his pre-existing belief of the possibility of genitals shrinking and

retracting into the abdomen. This case highlights the importance of psycho-educating the practitioners of alternative medicine as they form an important part of the pathways to care in various cultures before the individual seeks formal care. This case also highlights the implications of treatment in migrants as it was seen that the patient sought treatment only when he was away from work. It is always preferable to probe into the origins of various beliefs that the patient brings into consultation to gain a deeper insight into their etiology. In such cases it is advisable to target the symptoms that are most disturbing to the patient such as *koro*-like symptoms in our patient. Following-up with the patient regularly along with psycho-education and removing misconceptions seems to give good results.

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**Corresponding author: Gurvinder S. Kalra, Assistant Professor of Psychiatry, Department of Psychiatry, OPD 21, New OPD Building LTM Medical College & Sion General Hospital; Mumbai 400 022 India.**

**Email:** kalragurvinder@gmail.com

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## CASE REPORT

# A CASE OF NEUROLEPTIC MALIGNANT SYNDROME WITH QUETIAPINE FROM IRAN

*Bidaki Reza\*, Pour Rashidi Ahmad\*, Mansoori Mohammad\**

**\*Department of Psychiatry, Rafsanjan University of Medical Sciences,  
Rafsanjan, Moradi Hospital, 7713961151 Iran.**

## Abstract

**Objective:** To report a case of neuroleptic malignant syndrome (NMS), secondary to low dose quetiapine in an elderly Iranian man. **Methods:** We report a 66-year-old male presented with a temperature of 39.30c, dysphagia, aphasia and decreased level of consciousness and mutism following the use of 25 mg quetiapine. **Results:** Some evidence suggests an atypical NMS presentation with the atypical antipsychotics. Atypical NMS has been defined as less severe than that seen with conventional antipsychotics. Symptoms include fewer EPS, smaller increases in CK, less muscle rigidity, and lower fever. **Conclusion:** Clinicians should be aware that NMS with a single dose of quetiapine is possible. *ASEAN Journal of Psychiatry, Vol. 13 (1): January – June 2012: 96-98.*

**Keywords:** Neuroleptic Malignant Syndrome (NMS), Quetiapine, Iran

## Introduction

In 1968, Delay and Deniker named NMS which was initially introduced in French medical literature in 1960. According to DSM-IV, an essential feature of NMS is the "development of severe muscle rigidity and elevated temperature in an individual using a neuroleptic medication" [1]. These features must be accompanied by two or more of the following symptoms: diaphoresis, tremor, dysphagia, incontinence, changes in consciousness, mutism, tachycardia or changes in blood pressure, leukocytosis, and evidence of muscle injury (like myoglobuliniuria). NMS is thought to occur more frequently with high potency neuroleptics (typical antipsychotics) than with low-potency or atypical antipsychotics due to a drug's mechanism of action. Conventional antipsychotics block dopamine (D2) receptors, whereas new antipsychotics have greater antagonism for serotonin receptors than for dopamine receptors [2].

With the novel antipsychotics, the risk of NMS is likely to be decreased, but this remains probable [3, 4]. We searched through MEDLINE/PubMed and Iowa Drug Information Services and found 14 other cases that showed incidence of NMS with quetiapine [5].

## Case Report

A 66-year-old Iranian male was admitted in emergency department with a temperature of 39.3 0c , dysphagia , aphasia ,decreased level of consciousness, masked face, rigidity, urinary incontinence and mutism . Primary differential diagnoses included aspiration, stroke and infection were considered. His Glasgow Coma Scale (GCS) score was 10. As these were excluded, NMS was considered. He was diagnosed to have Alzheimer disease of mild severity five years ago. Two weeks prior to the above presentation, he complained of depressed mood, poor sleep and palpitation. He was then prescribed quetiapine 25 mg and clonazepam 1

mg and propranolol 20 mg BID. One day after starting quetiapine, he developed a temperature of 39.3.c, associated with bradycardia and bradykinesia. His a creatine phosphokinase (CPK) level was 442 at first and 760 in the next laboratory test. He was admitted to the internal ward of hospital.

His blood pressure was at upper limit of normal; and his pulse rate was 55 bpm. The Brain Computed Tomography was normal following which, brain Magnetic Resonance Imaging was done. The findings showed age related atrophy and mild ventricles dilation with no mass, hemorrhage or shift is seen. An Arteriolosclerotic change was noted in both cerebral hemispheres. Also there was mild mastoiditis on the right side. Arterial blood gases showed a metabolic acidosis. (pH=7.325, PCO<sub>2</sub> (Pressure of carbone dioxide) = 40.8, PO<sub>2</sub> (Pressure of oxygene)=78.9, Oxygen Saturation=94.1, HCO<sub>3</sub>(Bicarbonate)=20.6, BE=-4.7, BE ecf (Base effect extra cellular fluid) = -4.5, BB=43.2). In this case, we conclude that the concomitant administration of quetiapine and propranolol caused neuroleptic malignant syndrome.

### **Treatment**

As soon as NMS is suspected in this patient, antipsychotic therapy was been withheld. Dantrolene was used to treat symptoms of muscle rigidity which improved after 3 days. Dantrolene was discontinued on the 4th day. Hydration is especially critical in this group of patients to avoid renal failure secondary to development of rhabdomyolysis [6] too. Supportive care for patients with NMS includes cooling blankets, venous thromboembolism prophylaxis, and mechanical ventilation if breathing is impaired due to muscle rigidity [7]. Bromocriptine 2 times daily at beginning doses of 2.5 mg and increased up to 5 mg 2 times daily and amantadine 100 mg twice daily was prescribed. Electroconvulsive therapy (ECT) is an effective treatment for NMS, but not administered in this case. Finally, the patient was discharged in favorable condition, with complete resolution of symptoms. Bromocriptine was discontinued but amantadine has been

recommended for use. After two weeks, he was good but could not recall what happen to him. Approximately 63% of patients with NMS resolve within a week, and almost all recover within a month [8].

### **Discussion**

CNS disorders to be considered in the differential diagnosis of this case include infection, acute lethal catatonia, seizures, Parkinson's disease, hepatic and renal encephalopathy, and cerebrovascular accident. Systemic disorders to consider include sepsis, thyrotoxicosis, pheochromocytoma, tetany, and acute porphyria. In addition, several adverse drug reactions must be considered such as malignant hyperthermia, anticholinergic delirium, antipsychotic-induced heat stroke, lithium toxicity, strychnine poisoning, heavy metal poisoning, serotonergic syndrome, illicit drug ingestion (eg, amphetamines, phencyclidine), and withdrawal states from alcohol or benzodiazepines [9 - 11].

Some evidence suggests an atypical NMS presentation with the atypical antipsychotics. Atypical NMS has been defined as less severe than that seen with conventional antipsychotics. Symptoms include fewer EPS, smaller increases in CK, less muscle rigidity, and lower fever [12]. Due to the difference in their affinity for dopamine receptors, patients receiving typical antipsychotics have a greater risk of developing EPS. We must also consider that even single dose of an atypical antipsychotic can give rise to extrapyramidal adverse effect like NMS.

### **Declaration of interest: None**

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**Corresponding author: Reza Bidaki, Department of Psychiatry, Rafsanjan University of Medical Sciences, Rafsanjan, Moradi Hospital, 7713961151 Iran.**

**Email:** Reza\_bidaki@yahoo.com

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## CASE REPORT

# TREATMENT CHALLENGES IN THE MANAGEMENT OF BIPOLAR DISORDER: A CASE REPORT

*Rahima Dahlan\*, Siti Nor Aizah Ahmad\*\**

**\*Department of Psychiatry and Mental Health Hospital Kajang,  
43000 Kajang Selangor. \*\*Department of Psychiatry and Mental Health  
Hospital Kuala Lumpur, 50586 Kuala Lumpur, Malaysia.**

## Abstract

**Objective:** This case report highlights on the challenges in the management of people with bipolar disorder. **Method:** We report a case of 36 year-old lady living with this disorder and her journey in a search for a meaningful life. **Result:** Adherence to treatment is a major determinant of outcome in bipolar patient like Ms WMY. Poor insight, negative attitudes towards treatment and poor understanding of medications and the illness can all lead to reduced adherence. **Conclusion:** This case demonstrates on how poverty of insight, poor social support, on-going stressors with significant life events and poor compliance to treatment create a series of stumbling blocks in recovery from bipolar disorder. *ASEAN Journal of Psychiatry, Vol. 13 (1): January – June 2012: 99-101.*

**Keywords:** Bipolar Disorder, Treatment Adherence, Depot Antipsychotics

## Introduction

Bipolar disorder is now increasingly recognized as a major cause of disability and morbidity. The illness can interfere repeatedly and sometimes profoundly with patients' well being, productivity and can be associated with increased morbidity and mortality [1]. Compliance to treatment appears to be a major problem in managing patients with this illness and this contributes significantly to the process of recovery [2]. This paper aims to describe the journey of patient with bipolar disorder and also illustrates on how poverty of insight, poor social support, on-going stressors with significant life events and poor compliance to treatment and clinic visits lead to series of problems interfering her journey to recovery.

## Case Report

Ms. W.M.Y is a 36 year-old Chinese lady, single, coming from a socio-economically deprived family. She was born out of wedlock and was adopted since infancy by a kind-hearted single lady, who became the sole attachment figure in her life. She grew up in a squatter area and due to poverty, she had to leave school in Form Two to work and support her living.

Her journey began when she was 17 years old, in 1991. She presented to Hospital Kuala Lumpur (HKL) with symptoms of irritability and paranoia towards her foster mother. She was prescribed with Tablet Haloperidol together with monthly injection of Flupenthixol to ensure compliance to treatment as her insight into her illness was poor. She came for out-patient follow-up during the subsequent years but



tended to default her medication when she felt well.

In March 2003, her manic symptoms flared up with disruptive behaviour. She had elated mood with pressured speech and became highly irritable which prompted a readmission. At this juncture, a mood stabilizer, Tab Sodium Valproate was commenced for the first time to which she tolerated well. Haloperidol was changed to Sulpiride, which caused her less extrapyramidal side effects and her monthly depot injection continued. She was more settled and manageable and continued her treatment after being discharged from hospital.

She had no admission for almost 3 years until December 2006 when her foster mother became ill with cancer and was unable to supervise her medication and hospital follow-up. She stopped her treatment, not being able to work as she had to look after her ill mother. All these psychosocial stressors together with poor treatment adherence had precipitated her subsequent illness episodes. She had initial episodes of being depressed with suicidal ideation for a month and later brought to hospital after she became unmanageable at home with violent and destructive tendencies. Her symptoms were not controlled with medications and eventually electro-convulsive therapy (ECT) was started to control her aggressiveness. She showed improvement after the seventh ECT and was continued until the ninth session which led to a marked improvement and enable her to be discharged home. A multidisciplinary team was involved in managing her. She was referred to the Social Worker Officer (SWO) for financial aids and home visit for further help in getting a new placement. Referral to the Community Psychiatric team (CPS) of HKL was also made to further monitor her treatment adherence at home, reduce crisis and also mobilize support.

In January 2009, her agony continued when she finally lost her mother and the house that they lived in was about to be demolished. She became depressed and had a suicidal attempt where she overdosed herself with her late foster mother's medications. She switched into mania

after 1 week and started to become aggressive which led to another admission.

On mental state examination, she was found to have labile mood, pressured speech, argumentative and extremely irritable. Physical examinations revealed an obese lady with BMI of 32. Hematological and biochemical investigations were normal. Again, her symptoms, particularly aggression, were not controlled with maximum doses of antipsychotic, benzodiazepine and mood stabilizer. She continued to be very disruptive and extremely argumentative that she had to be restrained to bed most of the times. She, again, needed a treatment with ECT and only started to show response after the tenth ECT, where she started to become more subdued and manageable. ECT was continued until the twelfth session and maintained regularly at 3 weekly intervals.

Augmentation of ECT with the pharmacotherapy treatment of Tab Epilim, Tab Quatipine, Tab Clonazepam and monthly depot IM Fluanxol had proven successful to control the symptoms experienced by Ms WMY.

## **Discussion**

Ms WMY has faced a lot of challenges in the process of recovery from bipolar disorder. Her poverty of insight, poor social support, on-going stressors with significant life events and her poor compliance to treatment and clinic visits had created a series of problem in the management of her psychiatric condition.

Life events were associated with a higher risk for relapse, and relapse occurred more quickly among subjects who experienced a severe life event [3].

Adherence to treatment is a major determinant of outcome in bipolar disorder. Poor insight, attitudes towards treatment, and poor understanding of medications and the illness can all lead to reduced adherence. In this case, a depot injection was used for better delivery of medication, which seemed to be effective to a certain extent. Several case series and

naturalistic trials that have used first generation agents suggest that depot antipsychotics are effective in reducing relapse in bipolar illness [4].

ECT is considered if symptoms are inadequately controlled or if mania is too severe. Whereas, maintenance ECT may be considered for patients who respond to ECT during an acute episode but do poorly on oral agents. It is well established as an effective and safe treatment in acute episodes while continuation and maintenance treatments are important to prevent relapses and recurrences [5].

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**Corresponding author: Dr Rahima binti Dahlan @ Mohd Shafie, Department of Psychiatry and Mental Health, Hospital Kajang, Jalan Semenyih, 43000 Kajang, Selangor, Malaysia.**

**Email:** rahimadahlan@yahoo.com

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## CASE REPORT

### CASE OF SIGNIFICANT WEIGHT LOSS AND DYSPHAGIA “DUE TO A CURSE”

*Farhad F Vasanwala\*, Shu-Yun Tan\*\*, Rukshini Puvanendran\*\*\*,  
Beng-Yeong Ng\*\*\*\**

*\*Associate Consultant, Department of Family Medicine and Continuing Care, Singapore General Hospital, Outram Road, Singapore 169608; \*\*Associate Consultant, Department of Family Medicine and Continuing Care, Singapore General Hospital, Outram Road, Singapore 169608; \*\*\*Consultant, Department of Family Medicine and Continuing Care, Singapore General Hospital, Outram Road, Singapore 169608; \*\*\*\*Associate Professor, Department of Psychiatry, Singapore General Hospital, Outram Road, Singapore 16960.*

#### Abstract

**Objective:** This case illustrates how a patient with medically unexplained symptoms was “cured” using symbolic healing rituals of Christianity and traditional Malay black magic. **Method:** We report a case of a 49-year-old lady who presented with unexplainable weight loss and dysphagia despite extensive outpatient and inpatient medical investigations. She later attributed these symptoms to a “curse” by a Boyanese man with whom she had disagreements. After catharsis with a Roman Catholic priest and cleansing with a Bomoh (Malay witch doctor), the patient’s health improved. **Results:** We believe this patient had a conversion disorder due to recent multiple stressors in her life and she attributed her symptoms to the “curse” inflicted to her. The symbolic healing rituals by the Catholic priest and Bomoh “cured” her of her illness which concurred with the patient’s own beliefs for her illness. **Conclusion:** This article illustrates the importance of the physician being familiar with various local traditional beliefs, and how the interplay between various different religions and customs can come together to treat medically unexplained symptoms in a country like Singapore. *ASEAN Journal of Psychiatry, Vol. 13 (1): January – June 2012: 102-105.*

**Keywords:** Dysphagia, Medically Unexplained Symptoms, Symbolic Healing Rituals

#### Introduction

Singapore, despite being a modernised multicultural society, is rich with traditional beliefs which still play a role in the lives and health of an individual who is ill. In Singapore patients may hold multidimensional health belief systems, as biomedicine and alternative healing systems co-exists [1]. We present an interesting case of a patient that used dual traditional belief systems i.e. (Christianity and traditional Malay

black magic) to “cure” her dysphagia. This occurrence has not been reported in South East Asia although we believe that this may be prevalent.

#### Case Report

Mrs. J was a 49-year- old Eurasian lady with an unremarkable past medical history was referred by her family physician to our Family Medicine Clinic for dysphagia, “fever” and weight loss of

nine kilograms within the past one month. Preliminary studies done by her Family Physician which included tumor markers, HIV antibodies, fasting blood glucose, thyroid function tests, full blood count, liver function test, urea and electrolytes and Hepatitis markers were all negative.

Mrs. J had a gift of foretelling the future ever since her teens, a talent that she used to do readings for her clients. She owned a food court whereby she rented food stalls to various tenants. One month before her first presentation, she claimed that she suddenly lost her ability swallow anything even liquid diets. Feeling that the food was stuck in her throat, she was only then able to take soups with difficulty. There was no nausea, vomiting, regurgitation, odynophagia, constipation or diarrhea. She also felt feverish for the past one month, although no documented fever was noted. There was no travel or contact history. Ms J admitted to being stressed at work due to various demands required in running her business, moreover, she noted that her business has been much poorer ever since she became ill.

On examination she was thin and anxious. Her vital signs were stable; there was no visible or palpable goiter. Examination of the cardiovascular, respiratory, rheumatological, endocrinological systems was unremarkable.

She was electively admitted within that week for her dysphagia, weight loss and query fever. During admission, no fever was documented. Oesophagogastroduodenoscopy (OGD), Computer tomography (CT) of the neck and thorax, biochemical, hematological and microbiological tests, autoimmune markers was unremarkable.

On the third day of hospitalization, she confided to the corresponding author that her symptoms may be due to a curse inflicted upon her one month earlier by one of his tenants in her coffee shop. She had an amicable relationship with all her tenants except for a Boyanese man whom she suspected practiced a form of sorcery. She perceived an inexplicable bad aura, whenever she was near him or close to his stall. She

terminated his contract after he was persistently late in his arrears despite multiple warnings from her.

Angered by the termination of contract, he had cursed her and her shop. He placed a spell on the food the patient ate and released two "Toyols" into her shop. A "Toyol" is a small child spirit invoked by a Dukun (Indonesian shaman) or Bomoh (Malay witch doctor) from a dead foetus using black magic. They are the most common spirits used for theft to enrich their masters, perform sabotages and commit minor crimes [2]. According to a sole witness, grave dust was scattered around the grounds of her shop to pollute and imbue the shop with evil spirits.

She was unaware that this had taken place as the sole witness who is a tenant of her coffee shop kept the knowledge of these rituals and curses inflicted to the patient and her shop to himself. These events were finally divulged to her husband during her hospitalization by this witness who recounted the events that took place a month earlier after the altercation. The husband then immediately informed her of the curse. Thus, it appeared that her symptoms coincided with the casting of the spell.

She requested for spiritual help. As she was a Roman Catholic, the medical team sought the help of a Catholic priest from the hospital. After a session with the priest, which included prayers and catharsis, she subsequently felt much better. The priest also said that she needed to do a Novena (i.e. nine days of special Christian prayers for some special occasion or intention) before she will be fully cured. After that single session with the Catholic priest, her appetite improved significantly and she felt her dysphagia has resolved. She insisted on going home. After discharge, she also invited a Bomoh to exorcise the evil spirits in her shop. She noted that her business resumed nearly back to normal.

The patient subsequently decided to give up her shop as she felt that there was still some residual evil spirits that could not be removed as the grave dust was too entrenched and embedded. The patient now claims that everything is back to normal after giving up her business and

“taking it easy”. At the outpatient clinic review, there was weight gain of three kg from 41kg to 44 kg within six weeks. Nine months later, she remained well with her weight remaining steady at 45 kg.

## **Discussion**

There had been reported cases of patients in South East Asia suffering medical diseases after being inflicted by a curse or sorcery [3, 4]. Spirituality plays an important role on how patient may present to the doctor in our neighboring countries and Singapore [5, 6].

We had a patient who presented with unexplained dysphagia, “fever” and weight loss. Both the physicians and patient were initially unable to explain the signs and symptoms. This lady’s subliminal perception of lurking evil spirits inflicted her possibly affected her psychologically, culminating in a conversion disorder. Interestingly, she was only aware of the curse after she was informed by her husband on the third day of hospitalization.

She was unlikely to have suffered from masked depression as her affect was normal before and after the catharsis. Her main concern was that she might be suffering from a malignancy as manifested by her weight loss and dysphagia. Whether her “gift” of foretelling futures predisposed her to be more receptive to the bad aura towards the Boyanese gentleman and subsequent conversion syndrome, it is difficult to speculate as there is no published literature on this.

Another possible cause of her symptoms could be the fact that Ms J may have had “the giving – up/given up complex” described by Lester and Engel for patients who had died of supposed Voodoo death [7, 8, 9]. Here, the death of the victim takes place a few days after the curse was inflicted, usually by an individual that is known to the victim. However, Ms J did not know that a curse was inflicted upon her till much later. We believe that the most important factor leading to her recovery was suggestion and encouragement from the Roman Catholic priest and Bomoh. The symbolic healing model proposes that the

success of any healing system depends on the healer’s ability to enact a shared mythic world and then to emotionally transform the patient’s experiences by attaching her emotions to the transactional symbols, this process may evolve over several sessions, whereby the effects are cumulative rather than instantaneous [1].

The session with the Christian priest served as an abreaction for the patient. In Christianity if the priest is to rid of evil spirits, it entails commanding the spirits possessing the patient in the name of God, to depart, accompanying the ceremony with prayer- with or without sacramental extras, such as holy water- and preceding by the exorcists (most likely the priest) and his assistants by prayer and perhaps by fasting and by reception of the Sacrament [10]. The patient was unable to recollect the exact rituals performed by the Bomoh. Possible rituals practiced by Bomoh are discussed in an authoritative article by Chen [11].

These symbolic rituals may fulfill the patient’s faith, hope and pragmatic attitude [1]. Dow’s view is that symbolic healing it is the healer’s belief system that structures the healing process while the patient remains passive [12]. And finally perceived helpfulness and shared clinical reality are likely to be accumulative effects carried over several healing sessions which took place for our patient. Positive healing experiences evoke faith and hope, which in turn induce positive healing experiences in subsequent sessions [1].

Efforts and research recently have been made in various academic centers to address on these important issues during the undergraduate medical education [13]. Nonetheless, more local studies involving the whole spectrum of our multicultural society on the prevalence of such practices and how these patients perceive their illness would help us understand this rich cultural heritage and how it affects our patients.

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**Corresponding author: Dr Farhad Fakhruddin Vasanwala, Associate Consultant, Department of Family Medicine and Continuing Care, Singapore General Hospital, Bowyer Block A, Level 2, 169608, Singapore.**

**Email:** farhad.fakhruddin.vasanwala@sgh.com.sg

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## EDUCATION SECTION

# USING COMMUNITY MENTAL HEALTH PROJECT AS VENUE TO TRAIN PROFESSIONALISM: THE CYBERJAYA UNIVERSITY COLLEGE OF MEDICAL SCIENCES STUDENTS' EXPERIENCE

*Rafidah Bahari\* & Muhammad Najib Mohamed Alwi\**

**\*Department of Psychiatry and Mental Health, Cyberjaya University College of Medical Sciences (CUCMS), No. 3410, Jalan Teknokrat 3, Cyber 4, Cyberjaya 6300, Selangor, Malaysia.**

### Abstract

**Objective:** The aim of this paper is to examine medical students' views on the usefulness of a community project as a venue to train professionalism. **Methods:** Medical students at Cyberjaya University College of Medical Sciences (CUCMS) were surveyed following psychiatry community projects organized during year 4 undergraduate attachments in psychiatry. **Results:** A total of 176 students returned the survey forms. A majority of medical students thought that the psychiatry community project promotes teamwork and leadership skills. About a quarter thought that it helped foster their communication ability and encouraged them to be more reflective in their daily lives. These findings were translated into the potential of the community project to train "collaborative" and "managerial" affective domain learning outcomes of the university. **Conclusions:** The findings indicate that psychiatry community project or similar programmes may be useful tools to train several elements of medical professionalism. Future research however should utilise specific measurements to confirm this finding. *ASEAN Journal of Psychiatry, Vol. 13 (1): January – June 2012: 106-111.*

**Keywords:** Education, Medical, Undergraduate, Education, Professional, Health Promotion, Mental Health

### Introduction

Although at present there is no consensus on the definition of professionalism one thing is certain; that it is now a crucial element in the training of medical professionals. A rise of reports on doctors with improper conduct endangering patients' lives has necessitated a serious look into the education of doctors at the under and postgraduate levels. There seem to be a positive correlation between disciplinary action as practitioners and previous unprofessional behaviour in medical school. Hence, leading medical organizations such as

the National Board of Medical Examinations in America and the General Medical Council in the United Kingdom along with medical schools all over the world have taken the task of finding ways to effectively train professionalism and standards have been produced as guidance. According to Cruess and Cruess in teaching professionalism students must first know the cognitive base, be provided with opportunities to experience professionalism and reflect on them, have good role models to learn from and are assessed to further promote what they have learned. Most importantly, according to them, that

it is a continuous process that extends beyond the undergraduate and postgraduate years.

### ***Medical Professionalism at Cyberjaya University College of Medical Sciences***

Cyberjaya University College of Medical Sciences (CUCMS) is a private university college situated in a new city of Cyberjaya, Selangor. It is relatively new, have only been operating since 2005. The university is an institute of higher learning offering courses such as edicine, pharmacy, paramedics as well as traditional and complementary medicine in undergraduate and postgraduate level. There are currently nearly 1000 students attending the university, studying in the different courses.

Cyberjaya University College of Medical Sciences (CUCMS) believes that the teaching of professionalism should be incorporated into its curriculum. This is reflected by its philosophy and mission statement that can be summarized as follows “...to nurture students to produce doctors who are excellent in aspects of knowledge, skills and attitude”. Professionalism training in CUCMS is known as “Affective Domain” training which runs throughout the 5 years of medical school. It has explicit learning outcomes which are abbreviated by the pneumatic “Just Noble DR CUCMS” (Table 1). Methods in teaching the subject vary from lectures to reflection sessions to camps. New approaches are often sought to improve the effectiveness of the training.

**Table 1. CUCMS Affective Domain Learning Outcomes.**

<b>“Just Noble DR CUCMS”</b>
1. To demonstrate the judgment and decision making skill based on the bioethical and medico-legal aspects <b>(Just)</b> .
2. To demonstrate caring, reliability, punctuality and respectfulness <b>(Noble)</b> .
3. To demonstrate the passion and commitment to medicine <b>(Dedicated)</b> .
4. To demonstrate the ability to handle challenges and uncertainties both physically and mentally <b>(Resilient)</b> .
5. To demonstrate competence as empathic communicator – oral & written <b>(Communicative)</b> .
6. To demonstrate the ability to adapt in roles relevant in various fields, conditions and situations <b>(Universal)</b> .
7. To demonstrate altruism in relationships, team and community <b>(Collaborative)</b> .
8. To demonstrate leadership and volunteerism <b>(Managerial)</b> .
9. To demonstrate the understanding of the role of spirituality and cultural sensitivity in public dealing <b>(Spirituality)</b> .



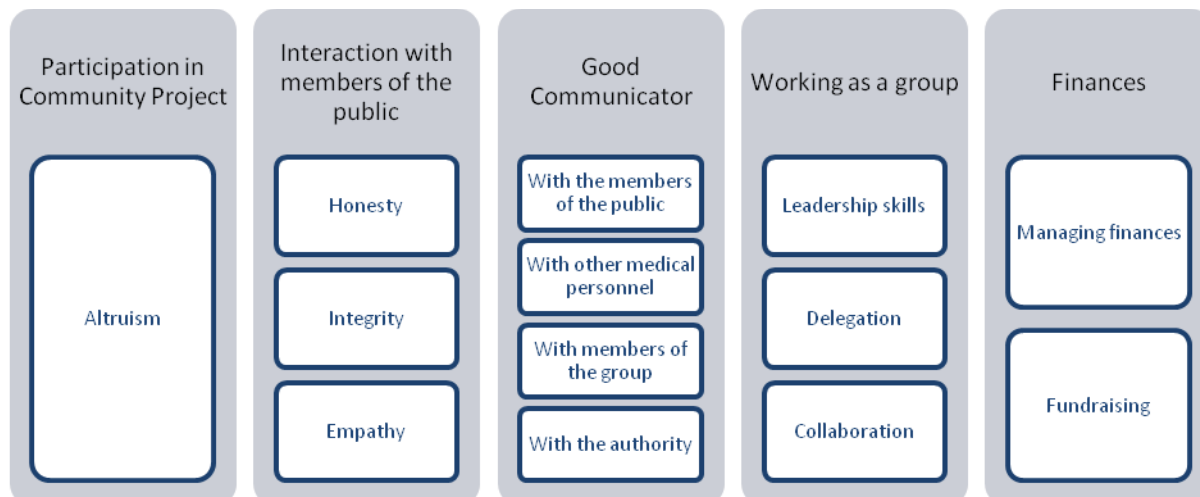
***Psychiatry Teaching at Cyberjaya University College of Medical Sciences***

In the fourth year of undergraduate medical training, students go through an 8-weeks attachment in psychiatry where they obtain experience and knowledge in the field through lectures, tutorials as well as ward and clinics exposure. As part of the course, they are required to organize a community project. The objective of the project is mainly to promote awareness of mental health to the general public.

However, as years progressed it is felt the exposure to the public at this stage of their studies can be a venue for them to practice professionalism skills that they have learnt and reflect on them. This is in keeping with a standard published by the American

Association of Medical Colleges and the National Board of Medical Examinations which states that it is the obligation of medical schools to provide students with such opportunities so that they can learn from it. As evaluation drives learning, it is also possible to assess them during this event as to further promote the process.

Bahari and Alwi argued that a community project in a clinical posting held during undergraduate medical training like the one organised by fourth year medical students in CUCMS is one such opportunity. The Psychiatry Community Project was thought to provide training in various aspects of professionalism (Figure 1). However, how much do the students, who actually carry out the project agree?



**Figure 1. Professional Values Demonstrated During the Planning and Execution of the CUCMS Year 4 Community Mental Health Project.**

In the light of the above statement the objectives of this study are:

(i) to determine the degree of each the professional value as described by the CUCMS Affective Domain outcomes were addressed according to CUCMS medical students who have completed their community project, and

(ii) to explore what professional values as described by the CUCMS Affective Domain outcomes are best and least dealt with by a community project type of activity.

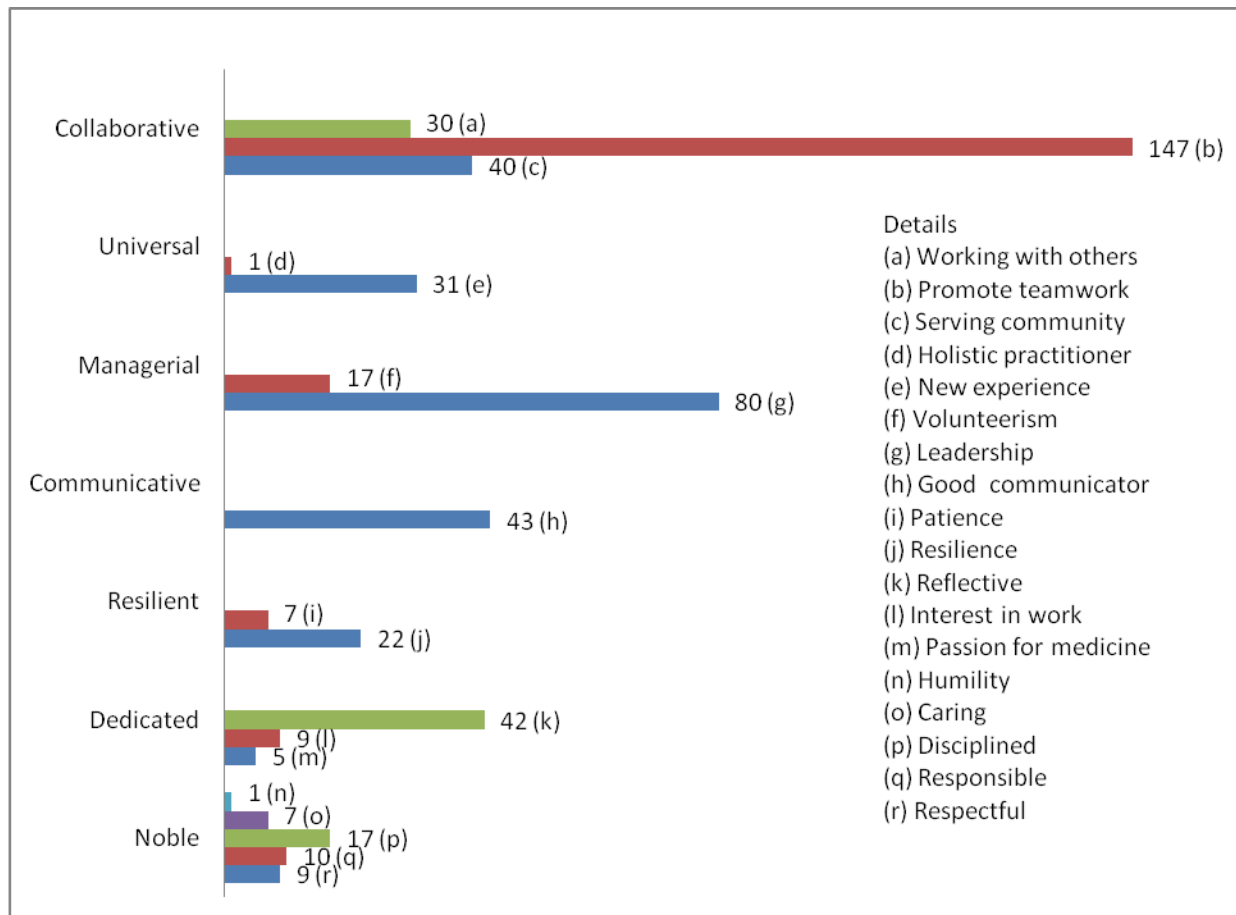
## Methods

This study utilises a mixed method approach. A survey in the form of anonymous self-assessment questionnaire was distributed to two batches of students (n=195) who were year 4 medical students in CUCMS between August 2009 and April 2011. At the time of study the number of students was small, so all the students who had fulfilled the inclusion criteria were included, except for 14 students who were involved in the pilot for the study. The survey asked the students to what extent do they agree, on a five-point Likert scale, each professional values were addressed during the community project. The values were worded according the

CUCMS affective domain learning outcomes as above. On the same survey, students were also asked what professional values were best and least addressed during the community project. Descriptive statistical analyses using SPSS version 19 were used to describe the findings and qualitative analysis through emerging themes.

## Results

From the 195 students given the questionnaire, 90.3% (n=176) completed the questionnaire. 41% (n=80) of the completers were male and 59% (n=115) female aged between 21 and 27.



**Figure 2. Students' Perspective on Professional Values Best Catered by the Community Mental Health Project.**

An overwhelming number of students (n=147) thought that this activity promotes and fosters team working skills. A large number of students (n=80) feels that the community project is a good training ground for leadership. Many students are of the opinion that being in the community project helps them to develop their verbal and written communication ability (n=43) and a similar number of students views that the activity encourages them to be more reflective in their daily lives. Thirty students admitted that it is a new experience for them to be mixing with different groups of society and hence taught them how to interact with other people accordingly. On the other hand, only one student each quoted that training to be a holistic practitioner and being humble were well addressed in the activity. Only a handful of students (n=5) stated that being involved in the community project demonstrated their commitment to the field of medicine.

Looking at the themes of professionalism as described by CUCMS Affective Domain Training, in the students' view, the learning outcome best catered by the community project and mental health are "collaborative" and "managerial". However, according to them, the learning outcome most poorly addressed by the project would be "noble".

## **Discussion**

The results indicate that both students and their lecturers in CUCMS concur on utilising the community project during their psychiatry attachment as a venue to train professionalism. It is fascinating from the mixed method approach, what emerges is that the most relevant values to be addressed through this method of teaching and learning are their leadership abilities, volunteerism, team working skills as well as ability to collaborate with other parties.

The large number of participant and the high response rate is a strong point of the study. It may give some insight of medical students' perception on the effectiveness of Psychiatry Community Projects and similar activities in inculcating professionalism. Professionalism is a 'large' construct covering a wide range of

definitions. Nevertheless, Brint argued the importance of balancing "expert professionalism" (clinical expertise in the context of medical professionalism) and "social-trustee professionalism" (sense of public and social purposes). This is in line with the American Board of Internal Physicians' (ABIM) insistence that future physicians should "aspire to altruism, accountability, excellence, duty, service, honour, integrity and respect for others.". To some extent, the findings in this study indicate that one possible way to train professionalism is via involving students in community projects.

Being a survey with no control group, this study is only exploratory in nature. Any conclusion derived from this study is at best preliminary. Future studies should be designed to use instruments that might measure specific elements of professionalism such as that proposed by Veloski and Hojat . This is an interesting strategy considering that a large majority of the respondents thought that training of one of Veloski and Hojat's elements i.e. "teamwork" were covered in the Psychiatry Community Project.

Finally, it is interesting to note that the outcomes of professionalism described by CUCMS are a mixture of affective, communication and social skills. When it was first developed nearly 6 years ago, it was felt that all of the skills were necessary for a good doctor to have and hence how the mnemonic "Just Noble DR CUCMS" came about. As more researches were done and more knowledge unearthed, it is felt that the outcomes may need to be further reviewed and examined. This study is a small effort in trying to improve the delivery and evaluation of our Affective Domain curriculum. Also, it is our small contribution in discovering how professionalism can best be taught in medical schools.

## **Conclusion**

Medical professionalism is a noble construct that signifies the 'respect' and social stature of doctors in the society. Its training however is

often *ad hoc* and unstructured. This survey highlights the important role of engaging medical students in community projects such as the Psychiatry Community Project conducted by CUCMS. Feedback from students indicates that this programme is useful to train several elements of medical professionalism. Hence, similar programmes should be encouraged to increase the effectiveness of medical professionalism training.

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**Corresponding author: Rafidah Bahari, Lecturer, Department of Psychiatry and Mental Health, Cyberjaya University College of Medical Sciences (CUCMS), No. 3410, Jalan Teknokrat 3, Cyber 4, Cyberjaya 6300, Selangor, Malaysia.**

**Email:** rafbaha@gmail.com

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