The Ability of Primary Health Care Physicians to Detect Mental Disorders in a University Hospital Setting

TAWANCHAI JIRAPRAMUKPITAK, M.D., M.Sc.*,
WANLAPA WONGSARNSRI, M.Sc.*

Abstract

Objective : To determine how primary health care physicians differ in their ability and the factors underlying the differences between them in the ability to recognize mental disorders.

Method : The group studied consisted of 15 primary health care physicians detecting mental disorders in 750 randomly selected adult patients of the general practice clinic in Thammasat University Hospital. The GHQ-28-Thai version was used as the reference method in the identification of psychiatric cases compared with the physicians' own assessment. Univariate and multivariate statistical analysis were used.

Results : There was a great variation in the ability of the physicians to detect mental disorders. The recognition ability was associated with the medical school from which the physician graduated. The discrimination ability was not associated with any factors.

Conclusion : The medical school plays a role in determining the ability to detect mental disorders. This information would usually inform future developments in psychiatry teaching at both undergraduate and postgraduate levels.

Key word : Primary Health Care Physicians, Mental Disorders, Ability

* Psychiatry Unit, Faculty of Medicine, Thammasat University, Pathum Thani 12120, Thailand.

Common mental disorders (CMD) are among the most frequent and disabling disorders in primary care attenders[1-3]. The disorders, previously termed neuroses, are characterized by a group of distress states that describe states of anxiety and depression. In the context of Thailand, one recent study in a primary health care setting in a University Hospital reported high levels of mental disorders in patients[4].

Although there are high prevalence rates of CMD among primary care settings, a large number of patients with mental problems remain unrecognized by general practitioners. According to a study using GHQ-28-Thai version, 57 per cent of the patients in the general practice outpatient department of a university hospital in Thailand had mental disorders, whereas primary care physicians identified only 18 per cent of the cases, as reported previously [4]. This is partly because the presenting complaints of CMD in primary care are usually somatic: some patients may admit to having emotional symptoms on enquiry while others persist in attributing their illness to bodily causes. Somatic presentations have been linked to low recognition rates of CMD by primary care physicians[5].

Apart from somatic manifestations of the illnesses, physicians' characteristics also play an important part in causing the low recognition of the problem. Physicians themselves differ greatly in their ability to detect mental disorders[3,6]. The difference may be due to the particular personality characteristics of physicians, their experience, aptitude, attitude towards psychiatry, interviewing skills, and the ability to allow patients to express verbal and vocal cues. One study reported that transference and countertransference phenomenon in the interview situation can affect the doctor's ability to recognized mental disorders[7].

Little work has been done on the ability of physicians to detect mental illnesses among patients in primary health care settings in Thailand. This paper describes some of the results of a study investigating the prevalence and associations of CMD in primary care attenders in a university hospital in Pathumthani, Thailand. Detailed findings on the prevalence are reported elsewhere[4]. The aim of this preliminary study was to determine how primary health care (PHC) physicians differ in their ability to detect mental disorders and which demographic characteristics of the physicians affect their ability.

MATERIAL AND METHOD
Participants

The study was a cross-sectional survey of primary health care (PHC) physicians at the general practice outpatient department of Thammasat University Hospital in Pathumthani, Thailand. The data were gathered from August, 1999 to January, 2000. The PHC physicians were those who had graduated from medical schools within 3 years prior to the study, and did not have any specialization. A total of fifteen, randomly selected, PHC physicians participated in the study. The patients were adult, aged 18 years and older. Those below 18 years, needing urgent medical treatment, or seen for reasons other than illness (such as for health check-up, vaccination, insurance claim or driving test) were excluded from the study. Simple random sampling of consecutive attenders was carried out until 750 patients were included. Fifty patients were assigned to each of the PHC physicians.

Assessments

Psychiatric illnesses were determined on two criteria: a standardized questionnaire (GHQ-28-Thai version) and a physician assessment scale.

Standardized questionnaire

The GHQ-28[8] is a widely used self-report measure which was designed as a screening device for estimating minor psychiatric disorder in the general population. The 28-item Thai version of the GHQ has been validated in Thai populations by Nilchaikovit et al, 1996[9] and Piyavhatkul et al, 1998[10]. The questionnaire elicits information on a variety of mental symptoms. On the GHQ-28, patients record their own estimates of symptom severity, present during the past few weeks on the 4-point scale (0-0-1-1), ranging from "not at all", to "extremely". Responses are sum total. Two studies on two Thai populations reported that a cut-off score of 5/6 provided the optimal balance of sensitivity (81.3-84) and specificity (76-88.2) for case detection[9,10].

Physician assessment scale

The patient's mental health was assessed by the PHC physician using an assessment scale. On this scale, the severity of mental disorder was rated using a 6-category classification (ranging from 1 to 6, or as follows in order: "illness absence", "pro-

bable absence", "probable illness presence", "presence-mild degree", "presence-moderate degree", "presence-severe degree"). 'Physician' cases were those whom the physician had assessed as having a score of 3 or over. If a mental disorder was present or probably present, the physician would also indicate the principal psychiatric diagnosis, need for psychiatric care, and treatment provided for the patient on that particular visit. They also filled in a questionnaire inquiring about their background sociodemographic information including gender, age, years as practicing GP, undergraduate medical school, intended specialization, and attitude towards psychiatry.

Procedure

On coming to the clinic, a nurse assistant asked each patient to participate in the study. The patient was informed that confidentiality was assured. Participation was voluntary and based on oral informed consent. The volunteering patient would complete a 28-item General Health Questionnaire-Thai version (GHQ-28) before entering the physician's room. After seeing each recruited patient, the PHC physician completed the physician assessment scale. The physician had no knowledge of the patient's GHQ score. Data collected from the two methods were compared and analyzed.

Statistical methods

Data were analyzed using SPSS-PC software. The kappa coefficient was used to determine correlations between the two assessments ('GHQ' and 'Physician' criteria). Sensitivity was used to determine the physician's ability to detect mental disorders. The Discrimination index (d') was used to determined the physician's ability to discriminate true mental health problems from the false ones. Using 2*2 tables, the Discrimination index (d') was computed according to the method described by Macmillan N et al, 1991[11], as follows:

$$d' = z(H') - z(FA')$$

where d' indicates the physician's ability to discriminate patients with psychiatric problems from those without ; H is a hit rate: FA is a false alarm rate: d' is defined in terms of z, the inverse of the normal distribution function. The z-transformation converts

a hit or false-alarm rate to a z-score, i.e: to standard deviation units.

Nonparametric statistics were used to test for significance between variables. Comparison of categorical data between groups was done with the chi-square test. Comparison of continuous data between two groups was done with the Mann-Whitney U, whereas the Kruskal-Wallis was used to compare continuous data on more than two subgroups of subjects. The logistic regression analysis was u sed as the multivariate statistical method in simultaneous analysis of associations between several factors.

RESULTS
Demographics of PHC physicians

Table 1 shows the distribution of the physicians in terms of demographic characteristics. Of the 15 physicians entering the study, ten were men and five women. The mean age was 28.8 years and the number of years as a physician ranged from about 6 months to two and a half years. The mean duration was 1.47 years. There were 4 medical schools from which they had graduated. Most (n=5) wanted to train further in internal medicine. Their attitude towards psychiatry was mostly indifferent.

PHC physicians *vs* GHQ-28

According to the GHQ-28, 54 per cent of the men and 59 per cent of the women were classified as cases. According to the physician's assessments, 17 per cent of the men and 19 per cent of the women had a mental disorder. In all, 57 per cent of subjects were classified as 'GHQ' cases and 18 per cent as 'physician' cases. The kappa coefficient between these methods was only 0.1. The concordance with the GHQ ratings ranged from 26 per cent to 62 per cent. A total of 50 per cent of the subjects were found concordant by use of the two methods. Sensitivity varied between 0.03 and 0.58 and specificity between 0.54 and 1.0. The overall sensitivity was 0.23 and the specificity 0.88 with the GHQ as the reference measure. As expected, there were great differences between the physicians in the ability to recognize mental disorders (Table 2). Discriminability Index (d') varied from -0.54 to 1.39.

Factors associated the physicians' ability

To analyse these differences in greater detail, the PHC physicians were divided into sub-

Table 1.   **Characteristics of the PHC physicians.**

	Men (n=10)			Women (n=5)		
	n	Mean	Range	n	Mean	Range
Age	10	30.8	22 - 40	5	24.8	22 - 26
Years as physician	10	1.3	1 - 3	5	1.8	1 - 3
School						
- A	6			0		
- B	1			2		
- C	2			3		
- D	1			0		
Intended specialization						
- Medicine	4			1		
- Surgery	1			0		
- Ob&Gyn	1			1		
- Pediatrics	1			3		
- Orthopedics	1			0		
- Radiology	1			0		
- Uncertain	1			0		
Attitude towards psychiatry						
- Unpleasant	3			0		
- OK	7			3		
- Pleasant	0			2		

Table 2.   **The detection and discrimination ability of each PHC physician.**

Number	GHQ (%)	Physiciansa ssessment (%)	Sensitivity	Specificity	Discriminability Index (d')	Concordance (%)
1	62	6	0.1	1.0	0.73	44
2	58	18	0.24	0.90	0.61	52
3	50	12	0.2	0.96	0.91	58
4	62	8	0.1	0.95	0.32	42
5	62	30	0.29	0.68	-0.07	44
6	52	52	0.58	0.54	0.30	56
7	50	14	0.2	0.92	0.56	56
8	54	10	0.11	0.91	0.14	48
9	64	22	0.28	0.89	0.64	50
10	58	16	0.21	0.90	0.49	50
11	46	12	0.22	0.96	1.01	62
12	44	16	0.09	0.79	-0.54	48
13	62	26	0.39	0.95	1.33	60
14	76	2	0.03	1.0	0.00	26
15	60	26	0.4	0.95	1.39	62
Mean	57.3	18	0.23	0.88	0.52	50

groups according to age, years as practicing, undergraduate medical school, attitude towards psychiatry. The testing of differences was based on the premise that GHQ screening is accurate in identification of mental disorders. The results are shown in Table 3.

    Analysis concerning the concordance between 'GHQ' cases and 'physician' cases revealed several significant associations between the factors studied. The physician aged above 30 years performed better as a case detector than others, as did the physicians who had been practicing for longer than a year. Detection ability was also associated with the undergraduate medical school. On carrying out the logistic regression analyses, age, years as

Table 3.   The PHC physician's ability to identify and discriminate psychiatric cases.

PHC physician factor	N	Discriminability	P	Total Index (d')	P	Sensitivity agreement	P
Age			NS		NS		< 0.001
< 30	14	0.54		50.1		0.20	
31-40	1	0.3		56.0		0.58	
Years as practicing GP			NS		NS		< 0.05
- 1	10	0.52		48.8		0.19	
- 2	3	0.74		58.7		0.33	
- 3	2	0.21		47.0		0.25	
School			NS		NS		< 0.001
A	6	0.93		55.7		0.26	
B	5	0.16		48.0		0.16	
C	3	0.37		42.7		0.16	
D	1	0.3		56.0		0.58	
Attitude			NS		NS		NS
Unpleasant	3	0.39		50.7		0.2	
Indifferent	10	0.62		50.6		0.23	
Pleasant	2	0.25		50.0		0.25	

practicing GP, and undergraduate medical school were found to be still significant in explaining the differences in detection ability.

Mann-Whitney U and Kruskal-Wallis Analysis comparing the mean discriminability indices between groups in terms of age, sex, years as physician, undergraduate medical school, and attitude towards psychiatry revealed no differences among these groups. However, the school has a small, statistically insignificant effect on the ability of discriminating individuals with mental health problems from those without them.

DISCUSSION

The results from this study must be treated with caution due to the small number of physicians, the lack of heterogeneity among the physicians and the reliance upon a self-report measure.

Agreement between the two methods

Kappa value of agreement between 'GHQ' and 'physician' methods was low, and the level of agreement of about 50 per cent was comparable to a recent study on the recognition of mental disorders by care providers compared with a standardized instrument as the criterion of psychiatric illnesses. For example, a study by Patel & Mann[12] showed that overall agreement between the two methods was 55 per cent. This is because the PHC physi-

cians, who mostly were still young and had not much experience in diagnosing psychiatric patients, may have difficulty detecting mental problems in patients with somatic symptoms.

There was a great variation in the ability of the physicians to detect mental disorders. This result was not unexpected and was consistent with findings obtained in previous studies[3,6,13].

The ability of the physicians and associated factors

The paper described the judgement, and factors affecting that judgement, of illnesseses of psychiatric disorder by PHC practitioners and compared their assessment with the result of GHQ-28.

PHC physicians from school A were significantly more sensitive to detect mental illnesses than those from other schools, as were those with experience of being a practicing GP longer than a year. Different psychiatry curriculums among medical schools might account for variation in the detection ability. Age of the physician also affected the ability to detect the illness. Other factors including sex, fields of intent, and attitude towards psychiatry played no significant role in the detection ability.

However, in terms of discrimination ability, there were no factors significantly associated with this ability. A number of reasons may explain why overall PHC physicians had low discrimination

ability to detect mental disorders. Firstly, the physicians may have had inadequate training in the recognition and treatment of mental illness, particularly with respect to the types of mental illness seen in primary care[14]. Secondly, they may not be receptive to mental health problems[15]. Furthermore, physician characteristics such as attitude skills, interview style and past training could also affect the process of recognizing and diagnosing psychiatric disorders; and last but not least, patient characteristics, particularly comorbid conditions and presentation of complaints may complicate psychiatric manifestations and make them harder to recognize[16].

Suggestions

Further study is necessary to explore the physician's characteristics and past experience and patient characteristics as well as the nature of psychiatric complaints commonly encountered in primary care settings, which affect the detection and discrimination abilities. A larger and more heterogeneous sample size of physicians is crucial to make the findings more generalizable.

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ความสามารถของแพทย์ใช้ทุนในการตรวจวินิจฉัยปัญหาสุขภาพจิตของผู้ป่วยที่คลินิก เวชศาสตร์ทั่วไป โรงพยาบาลมหาวิทยาลัย

ตะวันชัย จิรประมุขพิทักษ์, พ.บ., วท.ม.*, วัลภา วงศ์สารศรี, วท.ม.*

วัตถุประสงค์ : เพื่อค้นหาปัจจัยที่มีผลต่อความสามารถของแพทย์ใช้ทุนในการตรวจวินิจฉัยปัญหาสุขภาพจิตของ ผู้ป่วยที่คลินิกเวชศาสตร์ทั่วไป โรงพยาบาลธรรมศาสตร์เฉลิมพระเกียรติ

วิธีการศึกษา : เป็นการวิจัยเชิงพรรณนา ศึกษาประชากร ณ จุดหนึ่งของเวลา (cross–sectional descriptive study) กลุ่มตัวอย่างเป็นแพทย์ใช้ทุนจำนวน 15 คน ทำการตรวจวินิจฉัยผู้ป่วยในคลินิกเวชปฏิบัติทั่วไปจำนวน 750 คน นำผลที่ได้รับมาเปรียบเทียบกับผลที่ได้จากแบบคัดกรองอ้างอิง GHQ–28

ผลการศึกษา : ความสามารถของแพทย์ในการตรวจหาปัญหาสุขภาพจิตแตกต่างกันอย่างมากในแต่ละคนและมี ความสอดคล้องต่ำเทียบกับแบบคัดกรองอ้างอิง ความสามารถในการตรวจหาปัญหาสุขภาพจิต (recognition ability) มีความ สัมพันธ์กับสถาบันที่แพทย์จบการศึกษา และไม่พบปัจจัยใดมีความสัมพันธ์กับความสามารถในการแยกแยะปัญหาสุขภาพจิต (discrimination ability)

สรุปผลการศึกษา : สถาบันการศึกษาอาจเป็นปัจจัยสำคัญหนึ่งที่มีความสัมพันธ์กับความสามารถของแพทย์ในการ ตรวจหาปัญหาสุขภาพจิตในเวชปฏิบัติทั่วไป สาเหตุหนึ่งอาจเป็นเพราะแต่ละคณะแพทยศาสตร์มีวิธีการจัดการเรียนการสอน และหลักสูตรจิตเวชศาสตร์แตกต่างกัน จึงควรมีการศึกษาเพิ่มเติมถึงสาเหตุและปัจจัยอื่น ๆ ที่เกี่ยวข้องกับปัญหาดังกล่าวเพื่อ เป็นแนวทางในการปรับปรุงหลักสูตรจิตเวชศาสตร์ทั้งในระดับก่อนและหลังปริญญา

คำสำคัญ : แพทย์ใช้ทุน, ปัญหาสุขภาพจิต, ความสามารถ

* สาขาจิตเวชศาสตร์, คณะแพทยศาสตร์ มหาวิทยาลัยธรรมศาสตร์, ปทุมธานี 12120