

Mental Health Problems in Primary Care: In the context of general health service in Japan

JMAJ 49(1): 3–14, 2006

Anna Maruyama*¹

Abstract

Objectives To assess the prevalence of patients with anxiety and depression in general practice (GP) setting in Osaka, Japan and establish the usefulness of self-reported questionnaires as a screening tool. To evaluate the risk factors for psychological distress and to confirm the relationship between psychological distress and impaired daily functioning.

Methods Cross-sectional study

Main Outcome Measures Used GHQ (General Health Questionnaire)-6 items total scores for identifying anxiety and depression, and SOFA (Symptom of Fatigue and Anergia)-6 items total scores for somatic disorder, sociodemographic variables and disability measurement.

Results The prevalence of patients with common anxiety and depression was 33.9% for this sample of 449 patients. Risk factors significant for a GHQ-6 case were being female, separated/divorced/widowed and postmenopausal. The patients' self-reported general health status was highly suggestive of their psychological disorders. Impaired social functioning and productivity were significantly related to patients' psychological distress.

Conclusion High prevalence of psychological problems in the GPs setting in Japan was consistent with the previous reports. A poor self-rated health status and impaired social functioning were good indicators of psychological distress. The impact of psychological disorders on patients' quality of life requires early detection and intervention.

Key words Cross-sectional, GHQ, Primary care, GPs in Japan, Psychosomatic disorders, Predicting factors

Introduction

Mental health problems, particularly milder forms of depression and anxiety, not only have a high incidence but also a high prevalence across many cultures and countries.^{1–3} Because the problems are often presented in less severe forms^{2,4} and coexist with physical disorders, it is likely that in the primary care setting, mental health problems are under-detected^{5,6} and remain unresolved over considerable time. The high prevalence of the impairment of quality of life due

to mental health problems imposes a heavy burden on patients' families and their communities. This constitutes a major public health problem.

GPs in Japan have long been the first point of contact for many patients suffering from psychological problems but the data available in Japan relating to this problem is limited.^{7,8} The purpose of this study is to determine the prevalence of patients with psychological disorders going to GPs in Japan by using a simple screening test that has been used in Australia.⁹ Sociodemographic variables identified as risk factors for psychological distress were evaluated and compared with

*1 Health Center KSC Branch, Hyogo

Correspondence to: Anna Maruyama MD, PhD, Health Center KSC Branch, 2-1 Gakuen, Sanda, Hyogo 669-1337, Japan.
Tel: 81-79-565-9045, Fax: 81-79-565-9046, E-mail: annamaru@zeus.eonet.ne.jp

Table 1 GHQ-6 items and SOFA-6 items

GHQ-6 items	SOFA-6 items
5. Feeling nervous or tense	6. Muscle pain after activity
12. Feeling unhappy and depressed	16. Needing to sleep longer
20. Feeling constantly under strain	17. Prolonged tiredness after activity
27. Everything getting on top of you	25. Poor sleep
33. Losing confidence	30. Poor concentration
34. Being unable to over come difficulties	31. Tired muscles after activity

previous studies to define the subgroups at risk. This study also looks at common and non-specific physical symptoms of patients that are suggestive of psychological problems.

Methods

Selection of GPs: In the first instance, all 12 doctors who were affiliated with a department of general medicine of Osaka University Hospital and practiced in the Osaka area were approached. The purpose and method of the study, and the requirement of the submission of the cases of about 100 patients per doctor were explained. Seven doctors agreed to participate in the study. Two doctors who dropped out of the study at the early stage, stated that it created too much extra work for receptionists as their reason for doing so. Thus this study is based on patients who attended 5 GP clinics in the Osaka area in the period from October to November 2001.

The reasons given by the 4 doctors who would not participate was that they were too busy or that it was too busy a time of the year to carry out the study. Another doctor, who declined to participate in the study, stated that none of her patients showed any identifiable psychological problems and if there had been any, the patient would have already been referred to a specialist.

Subjects: Patients were selected as either the consecutive or every other attendee according to the decision made by the individual GP. Those patients who appeared to have acute upper respiratory infections and those with cognitive function disorders were excluded. Patients were asked by the receptionist to fill in the questionnaires while waiting for the doctor. Those who had made more than one visit to the clinic in the period of the study were not asked to fill out the questionnaires twice.

A two-page patient self-assessment questionnaires, SPHERE-JP (Appendix) was used to evaluate the prevalence and the predicting factors of psychological distress of patients. In addition, a follow-up interview with participating GPs was undertaken using a semi-structured questionnaire.

The questionnaire (Appendix) is a Japanese version, translated and back-translated, of the 34-item Australian SPHERE-GP (Somatic and Psychological Health Report). The SPHERE-GP questionnaire¹⁰ was developed based on the assumption that 'Mental disorders in general practice are best characterized by mix of psychological and somatic distress.' (Table 1) Embedded in these 34-item questionnaires are 6 psychological items GHQ-6 (General Health Questionnaire) and six somatic items SOFA-6 (Symptom of Fatigue and Anergia) that best predict DSM-III (Diagnostic and Statistical Manual of Mental Disorders, III) diagnoses of GPs' patients with depression and anxiety dimension by CIDI (Composite International Diagnostic Interview). The response system employed for the 34 questions was: 'never or some of the time', 'a good part of the time' or 'most of the time' (scored '0-1-2', respectively). A pilot study was carried out with a group of 30 patients with a satisfactory compliance of all items.

In reference to previous reports,^{7,11,12} Socio-demographic indicators (Appendix) included years of formal education, employment, marital status, household number, and number of children. General health status was self-rated by patients as being excellent, very good, good, fair or bad. Women indicated their health status, as either pre- or postmenopausal. Questions included social and daily functioning during the previous month. Level of functioning with regard

Table 2 Characteristics of GPs and their patients

Doctor characteristics	All subjects	Dr (group) 1	Dr (group) 2	Dr (group) 3	Dr (group) 4	Dr (group)5
Age		53	52	58	52	51
Gender		F	F	M	M	M
Year of practice		9	15	18	10	17
Adult patients per day		24	20	25	60	45
Style of visit (appointment: A/walk in: W)		W	W	W	W	W
N	449	91	87	99	97	75

Patients Characteristics						
Female patients (%)	65.0%	71.4%	63.2%	56.6%	66.0%	69.3%
Age of patient (Mean ±SD)	56.5 ± 15.4	56.7 ± 13.9	50.9 ± 17.2	57.8 ± 14.6	59.7 ± 15.2	56.8 ± 15.0
GHQ-6 total score (Mean ±SD)	1.46 ± 2.02	1.45 ± 1.75	1.10 ± 2.01	1.88 ± 2.47	1.62 ± 1.91	1.11 ± 1.72
GHQ cases (%)	33.9%	36.3%	20.7%	40.4%	41.2%	28.0%
Restricted days (range)	1.2 ± 3.4 (0–30)	1.2 ± 2.8 (0–15)	0.8 ± 2.9 (0–15)	1.2 ± 3.03 (0–15)	1.4 ± 4.1 (0–21)	1.0 ± 3.8 (0–30)
Days in bed (range)	0.7 ± 2.3 (0–20)	0.6 ± 1.7 (0–10)	0.4 ± 1.6 (0–10)	0.8 ± 2.1 (0–10)	0.8 ± 2.5 (0–15)	0.8 ± 3.1 (0–20)
Number of people in household (range)	2.1 ± 1.6 (0–8)	NA	NA	3.5 ± 1.7 (0–8)	2.7 ± 1.6 (0–8)	3.0 ± 1.4 (0–7)
Number of children (Mean ±SD) (age range in years)	1.7 ± 1.1 (0–9)	1.7 ± 0.9 (0–5)	1.9 ± 1.1 (0–5)	1.8 ± 1.0 (0–4)	1.8 ± 1.3 (0–9)	1.6 ± 1.0 (0–4)
Years of education	13.5 ± 1.6	13.8 ± 1.3	13.6 ± 0.8	13.3 ± 1.5	13.5 ± 1.5	13.1 ± 1.7

Average number of people in Japanese households: 2.79

(Statistical Data Base System, Ministry of Health and Labor, 1999)

NA: Number of people in household not asked in questionnaires for patients of Drs 1 & 2.

to hobbies, housework, job, and relationships with others were self-rated by the patients. Subjects were also asked whether the reason for the visit was primarily psychological, physical or both.

Data analysis: A GHQ case, that is a patient with a likely psychiatric diagnosis was defined as having a total GHQ-6 item score (the anxiety and depression dimension) of 2 or more. A SOFA-case was defined as a total SOFA-6 item score (somatic dimension) of 3 or more. Since there is a strong positive correlation ($r=0.58$, $P<0.001$) between these two sets of questions, only the GHQ-6 scores were used in the statistical analysis. In a WHO Nagasaki study⁷ that used the GHQ-6 questionnaire, a cut off point of 2 or more was also used and this point gave the best sensitivity 76.6% and specificity 74.7%.

As mentioned later in the results section

(Table 6), a cut off of 2 or more for GHQ-6 total score discriminated a GHQ case from a Non-GHQ case with a significant difference in ‘restricted days’: missed days of work, school or regular responsibilities, or a level of impaired functioning over last one month. Mean restricted days for a GHQ case was 2.6 days while for a Non-GHQ case it was 0.47days. This finding also supported the appropriateness of a cut off point of 2 or more for a GHQ case.

All statistical analyses were conducted with the Statistical Package for Social Sciences (SPSS 10.0).

The Ethics Committees of the Geriatrics Department of Osaka University Medical School and the University of New South Wales approved this study.

Table 3 Comparison of GHQ-6 scores for social characteristics and health factors

		GHQ-6 score (SD)	n	P value ^a
Gender	Male	1.02 (1.60)	157	0.001
	Female	1.69 (2.18)	292	
Age	16–24	1.08 (1.66)	13	NS 0.82
	25–44	1.49 (1.99)	84	
	45–64	1.40 (2.00)	187	
	65–80	1.54 (2.09)	165	
Marital status	Not married	1.09 (1.64)	46	0.008 ^b
	Married	1.36 (1.93)	316	
	Wid /Sep/Div	2.08 (2.47)	80	
Years of formal education	13 or more	1.45 (2.02)	297	NS 0.89
	12 or less	1.43 (2.03)	138	
Employment	Unemployed	1.39 (2.20)	97	NS 0.623
	Employed	1.39 (1.88)	184	
	Housewife	1.63 (2.21)	90	
Children	None	1.43 (2.09)	75	NS 0.889
	1 or more	1.46 (2.01)	374	
Live alone	Yes	1.39 (1.95)	38	NS 0.576
	No	1.60 (2.13)	233	
Self-rated health status	Excellent	0.22 (3.22)	9	<0.001 ^c
	Very good	0.32 (0.89)	22	
	Good	0.58 (1.11)	125	
	Fair	1.74 (2.02)	261	
	Poor	3.44 (2.98)	27	
Menopausal	Premenopausal	1.31 (1.75)	87	0.037
	Postmenopausal	1.89 (2.33)	198	

^a: One Way Anova

^b: Post Hoc Test: not significant between Not married and Married

^c: Post Hoc Test: not significant among Excellent, Very good and Good

Results

Internal consistency of somatic and psychological dimensions: Cronbach's alpha (a measure of internal consistency) for the GHQ-6 items was 0.80 for the study population, female 0.82 (n=292) and male 0.73 (n=157) respectively. For SOFA-6 items Cronbach's alpha was 0.74 for all respondents, female 0.74 (n=292) and male 0.71 (n=292) respectively. Both GHQ-6 items and SOFA-6 items showed high internal consistencies among their items and together constructed 2 major dimensions of the questionnaires. Cohen's kappa, a measurement of agreement between two scales, GHQ-6 and SOFA-6, was a low 0.316. This supports the use of GHQ-6 items as a scale for evaluation of psychological cases and SOFA-6 items as a scale for evaluation of somatic cases.

GPs' characteristics compared with GPs in Japan:

Five doctors in this study have fairly typical general primary care practices. The five GPs (Table 2), 2 female and 3 male, ranging in age from 51 to 58, are solo, full-time, private practice doctors, affiliated with Osaka University Medical School. They share a similar career pathway; being trained in general medicine prior to starting their practices. They spent 8 to 18 years in clinical, research or teaching careers prior to commencing their practice as GPs. Years of private practice ranged from 9 to 18 years. They see primarily adult patients with general medical problems, though children below the age of 15 make up 20% to 40% of their patients. In order to compare these GPs to the average doctor in the Osaka area and in Japan as a whole, Dec. 30th 2000 database provided by the Ministry of Health, Labor and Welfare was used. Doctor

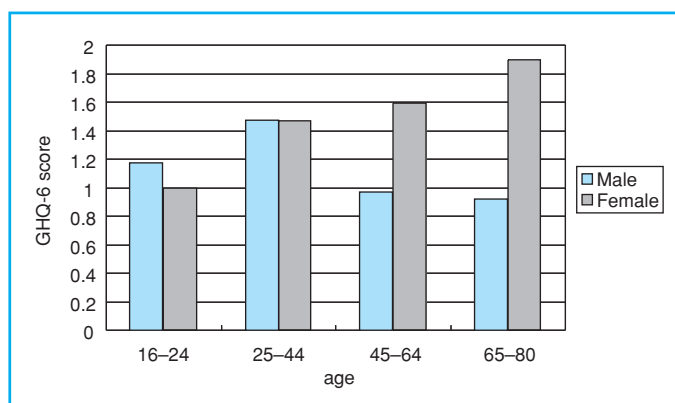


Fig. 1 Age and GHQ-6 total scores in males and females

distributions in Osaka prefecture are similar to those countrywide, except in that the ratio of doctors per 100,000 of the general population is higher in Osaka (223.3) than in Japan generally (191.6).

In the Osaka area and countrywide, the ratio of doctors working in hospitals to those in clinics is approximately 60% to 35%. Similarly in both Japan as a whole and the Osaka area, the ratio of male to female doctors is 85% to 15%, although for doctors under the age of 29 this drops to 2:1. While 80% of clinic doctors are full-time sole practitioners, the remaining 20% who practice with someone else usually do so with a family member. Among clinic doctors in Japan and in Osaka, nearly half of the doctors practice general medicine and function as the first point of contact for most patients in Japan.

Distribution of subjects (Table 2): The total number of subjects, $n=449$, aged 16 to 80, included 157 male (35.0%) and 292 female (65.0%). The mean age of the study population was 56.5 ± 15.4 years and there were no significant age or age group differences found between males and females. The return rate of questionnaires was 95.7% (range, 97.0–92.8% from practice to practice).

Proportion of GHQ and SOFA cases: The overall rate of mental disorder (GHQ-6 item total score two or more) was 33.9% with mean total GHQ-6 score 3.78 ± 1.88 and the over-all rate of positive somatic items (SOFA-6 item total score 3 or more) was 41.6% with total GHQ-6 mean score 3.20 ± 2.60 . The rate of those patients who

were cases on both GHQ and SOFA scales was 23.4% with mean GHQ-6 total score 4.11 ± 2.03 .

Significant sociodemographic factors (Table 3): The significant differences in GHQ-6 total score were found in each of the following variables: gender, age difference when male and female were considered separately, marital status, patient self-rated status of general health and menopausal status for women.

Gender difference: The GHQ-6 total score for all female subjects was 1.69 which was significantly higher than 1.02 for male ($P=0.001$).

Age difference: No significant correlation was found between age and GHQ-6 scores ($r=0.067$, $P=0.08$, $n=449$) in subjects when taken as a whole. When male and female scores were analyzed separately, there was a significant positive correlation between age and GHQ-6 scores for females ($r=0.141$, $P=0.015$, $n=297$) but not for males ($r=-0.109$, $P=0.176$, $n=157$).

Male and female in different age groups (Fig. 1): Both genders had similar lowest scores at age 16 to 24 years, with GHQ-6 scores 1.17 for male and 1.00 for female respectively. Age 25 to 44 scores increased to 1.48 for males and 1.47 for females respectively. However men and women developed significantly different scores in higher age groups. The mean score for men decreased to 0.97 for age group 45–64 year and remained low 0.92 for age group 65 to 80. By contrast, women’s GHQ-6 scores increased steadily with a corresponding increase in age: the youngest female group 16 to 24 years was 1.00, the score of women 45 to 64 was 1.59 and that of 65 to 80 year-old

Table 4 Comparison for GHQ-6 scores between male and female in different marital status

Marital status	Gender	N	Mean GHQ-6 score	P values*
Not married	Male	19	1.05	NS (0.970)
	Female	27	1.11	
	Total	46	1.09	
Married or de facto	Male	128	0.98	0.007
	Female	188	1.63	
	Total	316	1.36	
Separated/Divorced/Widowed	Male	7	1.43	NS (0.472)
	Female	73	2.14	
	Total	80	2.08	

*: One way Anova

Table 5 Physical symptoms as a risk factor for GHQ-cases, logistic regression analysis

Physical symptoms		Affirmative respondents ^a %	GHQ cases ^b %	Odds Ratio ^c (95% CI)
Tiredness	17. Prolonged tiredness after activity	36.1	55.4	5.0 (2.6–9.4)
	29. Feeling tired after rest or relaxation	28.1	62.8	4.0 (2.6–6.9)
Sleep disturbance	25. Poor sleep	28.7	60.5	3.8 (2.2–6.6)
	16. Needing to sleep longer	49.5	45.2	3.3 (1.8–5.8)
Musculo-skeletal pain	21. Joint pain	21.5	48.8	3.0 (1.7–5.0)
	4. Pains in arms or legs	20.7	49.6	2.8 (1.7–4.7)
	15. Back pain	56.6	42.5	2.5 (1.4–4.5)
	1. Headaches	17.9	60.9	2.7 (1.7–4.4)
Dizziness	28. Dizziness	16.9	66.1	2.8 (1.7–4.4)
	9. Fainting spells	17.2	55.0	2.8 (1.6–4.8)
Gastrointestinal	24. Diarrhea or constipation	27.4	46.6	2.6 (1.6–4.4)
	13. Gas or bloating	17.9	46.8	2.6 (1.6–4.3)

^a: The rate of respondents who in the affirmative to either 'a good part of the time' or 'most of the time' for each item^b: Rate of GHQ-6 cases among affirmative respondents^c: Odds ratio (95% confidence interval, $P=0.01$) for being a GHQ case (GHQ-6 items), adjusted for gender

women was 1.90.

Marital status (Table 3): Widowed/separated/divorced as one category had significantly higher GHQ-6 items score (2.08, $P=0.008$) than the group of not married (1.09) or married (1.36). No significant difference was found between the groups of not married and married.

Male and female in different marital status (Table 4): There was no significant gender difference for GHQ-6 item score within the category of not married (male 1.05 and female 1.11 respectively) or the group of separated/divorced/widowed (male 1.43, female 2.14). Within the category of married, married women had significantly higher GHQ-6 scores than married men (female 1.63 and male 0.98 respectively,

$P=0.007$).

Comparing the scores of married men and women by age groups, a significant difference between the genders in married subjects was found in the age group 45 to 64 years and 65 to 80 years. Married females in the age group 45–64 years had a significantly higher GHQ-6 score of 1.70 than that of males 0.82 ($P=0.01$). Married females, in the age group of 65 to 80 also had a significantly higher GHQ-6 score 1.64 than that of male 0.89 ($P=0.02$).

There was no significant difference in the mean GHQ-6 total scores in relation to the following socio-demographic characteristics as predicting factors for a GHQ case; years of formal education, employment status, having children or

Table 6 GHQ cases,* Non-GHQ cases and debilities

	All samples n = 449	GHQ cases mean ± SD	Non-GHQ cases mean ± SD	P values
	100%	33.9% (AU** 37%)	66.1%	
GHQ-6 score	1.46 ± 2.02	3.78 ± 1.88	0.27 ± 0.44	<0.001
Restricted days	1.15 ± 3.38	2.60 ± 4.61	0.47 ± 2.29	0.003
Days in bed	0.67 ± 2.25	1.10 ± 2.74	0.43 ± 1.87	0.001

* : GHQ case (GHQ-6 items total score ≥2)

** : AU Australian data

not, and living alone or not.

Patient self-rated general health status: GHQ-6 items total scores were highly correlated with subjects' self-rated general health status (Table 3). The mean scores for the five degrees of the health status were, recorded as excellent (0.22), very good (0.32), good (0.58), fair (1.74) and poor (3.44) respectively.

Postmenopausal status (Table 3): Females who were postmenopausal had significantly higher scores than females who were premenopausal (1.89 for postmenopausal and 1.31 for premenopausal respectively, $P=0.037$).

Reason for the visit: Among those who gave a reason for their visit ($n=267$), 208 people indicated a physical reason (77.9%). Two subjects gave the reason for their visit as psychological (0.7%) and 16 (6.0%) stated that both physical and psychological factors prompted their visit. There was a significant difference in GHQ-6 mean scores between physical (score = 1.38) and both physical and psychological reasons given for the visit 3.63 ($P<0.001$). The only three patients who answered that they 'did not know' their reason for visit had the highest mean GHQ-6 scores 3.67.

Physical symptoms as risk factors for a GHQ case (Table 5): Twelve physical symptoms were grouped as tiredness (tiredness prolonged after activity, feeling tired after relaxation), sleep disorder (poor sleep, needing to sleep longer), muskulo-skelatal pain (joint pain, pains in arms or legs, headaches) and gastrointestinal problems (diarrhea or constipation).

55.8% of subjects reported having back pain. This was the highest reported symptom. 42.5% of these patients with back pain scored more than 2 on their GHQ-6 items and were identified as GHQ cases. These subjects were 2.5 times more

likely to be GHQ cases than Non-GHQ cases (who had no back pain).

Tiredness and sleep disorder were the highest risks of being GHQ cases, with Odds Ratios 5.0 (prolonged tiredness after activity) and 3.8 (poor sleep) respectively. Dizziness and Gastrointestinal symptoms also had Odds Ratios 2.6 to 2.8 respectively.

GHQ cases, non-GHQ cases and debilities (Table 6): The percentage of GHQ cases (GHQ-6 total score ≥2) for the whole sample was 33.9%. The mean GHQ-6 total score for GHQ cases (3.78 ± 1.88) was significantly higher than that of Non-GHQ-6 case (0.27 ± 0.44 , <0.001).

Two indicators for debility, restricted days and days in bed during last one month were compared between GHQ cases and Non-GHQ cases. Both the mean restricted days and days in bed were significantly longer in GHQ cases than in non-GHQ cases.

Degrees of impairment for social functions and GHQ-6 scores: The GHQ-6 scores of the four social functions, hobby, housework, job and social relations were rated according to 3 degrees of severity (not at all, sometimes, definitely). Significant relationships were found between GHQ-6 scores and the degree of debilities in all 4 indicators (range $r=0.31-0.52$, $P<0.001$, 2-sided, $n=386-449$).

Logistic regression, predictors for GHQ-6 cases: Variables analyzed by logistic regression for their predictive value in determining GHQ cases (GHQ-6 total score ≥2) were: gender (male, female), age groups (16–24, 25–44, 45–64, 65 ±), marital status (not married, married, widowed/separated/divorced), years of education (12 or less, 13 or more), employment status (unemployed, employed), children (none, any), live alone (yes, no), self-rated health status (excel-

lent/very good, good, fair/poor) and degree of impairment for social functions (hobby, house work, job, social activities affected or not).

Of these variables, the risk factors that predicted GHQ cases were: a self-rated general health status as fair/poor (OR = 7.7, $P = 0.001$), female gender (OR = 3.1, $P = 0.006$), decreased motivation for work (OR = 1.9, $P = 0.002$), and the two highest age groups 45–64 years, (OR = 2.5, $P = 0.08$) and 65 ± years (OR = 2.3, $P = 0.05$).

GP Interviews: Three out of five doctors were surprised at the prevalence of patients found to have psychological problems. Their rough guesses of the prevalence of patients with psychological problems were 5–10% (2 GP's), 10–20% (1 GP), and 30% (2 GP's). Other points of note from these interviews are:

- (1) Different doctors identified different groups as being most at risk for psychological problems.
- (2) The number of cases the doctors had referred to mental health specialists in the past 12 months ranged from 2 to 10. Diagnoses for these cases were mostly depression. All the patients had been referred to psychiatrists, none to any other kind of mental health professional.
- (3) Depression and somatic complaints were the most common forms of the psychological disorders GPs saw in their patients.
- (4) Prescription of Benzodiazepines for treatment of depression and anxiety was the major treatment choice in these primary care settings, although 3 out of the 5 doctors prescribed SSRI's and other new drugs for depression.
- (5) The major barriers the doctors noted to giving more treatment for their patients' psychological problems were 1) lack of time, 2) lack of appropriate network or resources to refer their patients to, 3) lack of appropriate space in which to talk privately with their patients.
- (6) To obtain more information, most doctors preferred easily accessible and useful information available either on the internet or in a newsletter. Mental health related topics rarely formed part of their continuing medical education.

Discussion

According to the results of this study, the prevalence of GPs' patients in Japan with psychological distress was 33.9%. This finding is supported

by results of similar studies undertaken in Australia 37%¹³ and by the WHO 32.5%.⁶ Age and gender both play a significant role. It is not surprising given the population characteristics in Japan that the average age of the subjects was 56 years. The percentage of female patients was 65% (range 56–71% from practice to practice), which is higher than national average where women visiting out patient clinics is 55%.¹⁴ Accessibility issues for men in the study area may, to some extent, have resulted in them visiting company doctors at their workplace in favor of their GPs.

According to Bebbington PE¹⁵ women were two to five times more at risk of depressive disorders than men. Fujiwara et al.,¹⁶ from their community survey in Japan, reported that women had a rate of depression 3.4 times that of men. This study also identified gender as a risk factor for depression and anxiety; women were 1.7 times more likely to have mental disorders than men. However, women are generally more willing to express their emotions while traditionally this has been seen as weakness in men and could have contributed to the larger number of women found seeking medical attention.

Men and women experience stressful periods at different ages. The major stressful period for men was during the working age 25 to 44 whereas in women psychological scores were higher after the age of child bearing: 45 and older. This could be attributed to men's major responsibilities at work and for families as a breadwinner, while women remained being solely or mainly responsible for housekeeping even after their husband's retirement. Data from this study also indicates that postmenopausal status was highly correlated with the negative psychological well-being of women. These findings should lend insights to discussions about the need to develop resources to assist groups identified as having psychological difficulties, and how these resources might best be deployed: men in the work-force and women after the age of 45 may be target groups.

Table 7 compares variables of this study with WHO-Nagasaki⁷ and SPHERE-GP.¹⁷ All three studies used GHQ-6 as a screening instrument.

Two variables, marital status and subjects' self-rated general health status, were closely related to the psychological scores in all three studies. Age difference was also found in three studies with the exception that in this study the age difference was found only in females.

Table 7 Comparing SPHERE-JP with Nagasaki report and SPHERE-GP (AU) for social characteristics and health status as risk factor for a GHQ case

	WHO-Nagasaki	SPHERE-JP	SPHERE-GP (AU)
Gender	–	+	+
Age	+	+*	+
Education	+	–	+
Marital status	+	+	+
Employed or not	–	–	+
Children or not	–	–	+
Live alone or not	NA	–	NA
Self-rated general health status	+	+	+
Post-menopausal	NA	+	NA

+ : Significant difference in GHQ-6 scores in each factors; – : Not significant;
 Vacant cell: not included in the questionnaire; * : Significant for female only; NA: not available

Gender as a risk factor for a GHQ case was found in this study and the Australian result but not in Nagasaki report. Given it was done 20 years prior to this study in Nagasaki, social, political, economical conditions had changed.

Unlike the Nagasaki and Australian reports that showed lower levels of education correlated with higher levels of psychological problems, this study did not support such a finding. The factor that their sample size is greater may have contributed to the difference.

Neither this nor the Nagasaki study found any correlation between employment and having children or not, and the psychological scores. These findings were different from those of the Australian study, which demonstrated that unemployment, and having children were risk factors for psychological problems.

It is of importance that a general question enquiring about patients' own opinion about their health status (from excellent to poor), without specifying the question as mental or physical had a high correlation with their psychological scores. In other words, patients' comments about their general well-being could well reflect their psychological status. Logistic Regression indicated that self-rated general health status is the best predicting factor in identifying patients with psychological difficulties among all the variables evaluated in this study. This mirrors the Australian¹⁷ and Nagasaki findings⁷ and supports the assumption that patients visiting GPs do not discriminate their physical problems from their

mental problems.

When patients were asked a more specific question regarding whether their reason for visiting their doctor was psychological or physical, only 2 out of 267 reported that they visited doctors with a psychological reason. A report¹⁴ showed that Japanese people seek medical assistance for psychosomatic symptoms rather than psychological symptoms and this fact may be a reason for the difference.

The highly correlated relationship between psychological and somatic symptom items suggested the strong link between psychological and physical symptoms in patients visiting GPs in Japan. The somatic symptoms reported by the patients yielded high Odds Ratios to the GHQ-6 cases. Back pain has the highest rate 55.8% among subjects in this study with an OR 2.5. This percentage is consistent with the National Survey of Health 1999 (Kokumin Eisei no Douko) that back ache is the most common complaint amongst the general population in Japan. The two items questioning about fatigue had the highest ORs (range 4.0–5.0) and this reconfirmed previous findings in Australia¹⁸ and Japan¹⁹ that prolonged fatigue syndromes are common in primary care settings and are strongly associated with current psychological distress. The physical symptoms; back pain, headache, fatigue, sleep disorder and digestive system disorders are all risk factors for psychological distress and these symptoms should be of concern for the medical professions when considering somatic disorders.

A community survey carried out in Japan by Tomoda,²⁰ compared the degree of debilities of subjects with major depression and sub-threshold depression. Thirteen percent of the interviewed subjects had sub-threshold depression and 40% of the subjects with sub-threshold depression reported some sort of functional debility. Our study also showed that debilities expressed in terms of 'restricted days in the last one month' and 'days in bed in the last one month' were highly correlated to patients with mild forms of anxiety and depression.

From interviewing 5 GPs for their responses and comments, 3 out of 5 doctors were surprised at the high prevalence of patients found by the study to have psychological problems. The two GPs who were not surprised with the outcome were not necessarily the less busy ones. 'Interest and Concern'²¹ are major factors related to doctors' awareness of the problems. Although it may not be possible to modify doctors' 'concern', it should be possible to improve doctors' interview skill.

The number of cases that GPs referred to mental health specialists in the previous 12 months was less than 10 in any one of the GP practices in this study. None of the GPs referred their patients to psychologists or counselors. There seems to be a big gap between the needs of the GPs for psychiatrists and other professionals to assist in the treatment of their patients and what is available. When asked what groups were most at risk for psychological disorders, different doctors noted different groups, perhaps inadvertently selecting which patients they would be most likely look at more closely for psychological problems.

Conclusion

This study used the responses of 449 patients of 5 GPs in the Osaka area of Japan, to a simple

patient self-rated questionnaire. Collection of information about the prevalence of mental health problems in patients attending primary care clinics in Japan is essential to raise awareness about these issues amongst doctors and within the health care system in general. This study found that 33.9% of patients attending primary care settings in Osaka had psychological disorders. The prevalence is high though consistent with other international reports.^{6,13} A simple, quick screening questionnaire for psychological distress is useful and can assist doctors in better identifying the problems.

Groups found to be most at risk were females, females aged 45 or more, post-menopausal women, work-age men and anyone separated, divorced or widowed. This indicates an initial focus for the planning of mental health service delivery in primary care settings. An increased GHQ-6 total score was highly correlated with reduced productivity and impaired daily and social functioning. When all variables were tested by logistic regression, the best predictors for GHQ cases were patients who self-rated poor or fair general health status, female gender and decreased daily functioning.

This study identified a deficiency in the service provided to people with psychological problems in Japan. Learning from the comments of participating GPs and their experience with patients can help fill the gaps in the system of delivery of mental health services. In these days of rapidly increasing health care costs, it is in everyone's interest to identify people with psychological problems early and accurately.

Acknowledgements

I would like to thank Prof. Arie Rotem, Center for Public Health, University of New South Wales, Sydney and Prof. Ian Hickie, Professor of Psychiatry, the University of Sydney for their kindness and generosity in instructing me on this project

References

- Harris MF, Silove D, Kehag E, et al. Anxiety and depression in general practice patients: prevalence and management. *MJA*. 1996;164:526-529.
- Williams JW, Kerber CA, Mulrow CD, Medina A, Aquilar C. Depressive disorders in primary care: Prevalence, functional disability, and identification. *J Gen Intern Med*. 1995;10:7-12.
- Goldberg DP, Lecrubier Y. Form and frequency of mental disorders across centers. In: Üstun TB, Sartorius N, ed. *Mental Illness in General Health Care: An International Study*. Chichester: John Wiley; 1995:323-324.
- Üstun TB. Unmet need for management of mental disorders in primary care. In: Andrews G, Gebbers S, ed. *Unmet Need in Psychiatry: Problems, Resources, Responses*. Cambridge: Cambridge University Press; 2000:157-171.
- Spitzer R, Williams J, Kroenke K, et al. Utility of a new procedure for diagnosing mental disorders in primary care, The PRIME-MD

1000 study. JAMA. 1994;272:1749–1756.

6. Üstun TB, Von Korff M. Primary mental health service: Access and provision of care. In: Üstun TB, Sartorius N, ed. *Mental Illness in General Health Care: An International Study*. Chichester: John Wiley; 1995:352–355.
7. Nakane Y, Michituji S. Results from the Nagasaki Center. In: Üstun TB, Sartorius N, ed. *Mental Illness in General Health Care: An International Study*. Chichester: John Wiley; 1995:193–209.
8. Tsuda T, Shigemoto H, Hirano H, Watanabe Y. Clinical evaluation of depression in primary care setting. *Japan Medical Journal*. 1984;3117:47–50.
9. Hickie IB, Davenport T, Hadzi-Pavlovic D, et al. Development of a simple screening tool for common mental disorders in general practice. *MJA*. 2001;175:S10–17.
10. Hadzi-Pavlovic D, Hickie IB, Wilson AJ, Davenport TA, Lloyd AR, Wakefield D. Screening for prolonged fatigue syndromes: validation of the 'SOFA' scale. *Social Psychiatry and Psychiatric Epidemiology*. 2000;35:471–479.
11. Marks JN, Goldberg DP, Hillier VF. Determinants of the ability of general practitioners to detect psychiatric illness. *Psychological Medicine*. 1979;9:337–353.
12. Wittchen HU, Hofler M, Meister W. Prevalence and recognition of depressive syndromes in German primary care settings: Poorly recognized and treated? *International Clinical Psychopharmacology*. 2001;16:121–135.
13. Simon GE, Von Korff M, Piccinelli M, Fullerton C, Ormel J. An international study of the relation between somatic symptoms and depression. *NEJM*. 1999;341:1329–1335.
14. Health and Welfare Statistics Association. *Journal of Health and Welfare Statistics*. 2001;48:408–409.
15. Bebbington PE. The social epidemiology of clinical depression. (Retracted by Üstun TB, Sartorius N. Public health aspects of anxiety and depressive disorders. *International Clinical Psychopharmacology*. 1993;8:S15–20) In: Henderson, Burrows ed. *Handbook of Social Psychiatry*. Amsterdam: Elsevier Science Publishers.
16. Fujiwara S, Kitamura T. A psychiatric epidemiological study in Kofu-city. *Japan Medical Journal*. 1993;3618:47–50.
17. Hickie IB, Davenport TA, Scott EM, et al. Unmet need for recognition of common mental disorders in Australian general practice. *MJA*. 2001;175:S18–24.
18. Hickie IB, Hooker AW, Hadzi-Pavlovic D, Bennett BK, Wilson AJ, Lloyd AR. Fatigue in selected primary care settings: sociodemographic and psychiatric correlates. *MJA*. 1996;164:585–588.
19. Kitani T. A community survey of chronic fatigue. *Research on health services*. Ministry of Health and Labor Science Research Grant, 1999.
20. Tomoda T, Iwata N, Kitamura T. Prevalence and characteristics of subthreshold depression among non-clinical sample. *Archives of Psychiatric Diagnostics and Clinical Evaluation*. 1998;4:391–401. (in Japanese)
21. Wilmink FW, Ormel J, Giel R, et al. General practitioners' characteristics and the assessment of psychiatric illness. *Journal of Psychiatric Research*. 1989;23:135–149.

Appendix

SPHERE-JP page 1/2

Female Male, Age _____ Today's date _____

We would like to know about your general health.

For each question, please tick the appropriate response space.

Over the past few weeks have you been troubled by:							
	Some of the time or never	A good part of the time	Most of the time		Some of the time or never	A good part of the time	Most of the time
1. Headaches?				18. Sore throats?			
2. Feeling irritable or cranky?				19. Numb or tingling sensations?			
3. Poor memory				20. Feeling constantly under strain?			
4. Pain in your arms or legs?				21. Joint pain?			
5. Feeling nervous or tense?				22. Weak muscles?			
6. Muscle pain after activity?				23. Feeling frustrated?			
7. Waking up tired?				24. Diarrhoea or constipation?			
8. Rapidly changing moods?				25. Poor sleep?			
9. Fainting spells?				26. Getting annoyed easily?			
10. Nausea?				27. Everthing getting of top of you?			
11. Arms or legs feeling heavy?				28. Dizziness?			
12. Feeling unhappy & depressed?				29. Feeling tired after rest or relaxation?			
13. Gas or bloating?				30. Poor concentration?			
14. Fevers?				31. Tired muscles after activity?			
15. Back pain?				32. Feeling lost for words?			
16. Needing to sleep longer?				33. Losing confidence?			
17. Prolonged tiredness after activity?				34. Being unable to overcome difficulties?			

Over the past one month

- 1) Have you had to cut down or stop any activity you used to do such as hobbies, because of some illness or injury?
 - a. Not at all
 - b. Yes, sometimes or a little
 - c. Yes, moderately or definitely
- 2) Have you not been able to do something that your family (or household) expected from you as part of your daily routine?
 - a. Not at all
 - b. Yes, sometimes or a little
 - c. Yes, moderately or definitely
- 3) Have your personal problems decreased your motivation for work?
 - a. Not at all
 - b. Yes, sometimes or a little
 - c. Yes, moderately or definitely
- 4) Has there been a deterioration in your social relations with friends, workmates, or other people?
 - a. Not at all
 - b. Yes, sometimes or a little
 - c. Yes, moderately or definitely
- 5) How many days in total were you unable to carry out your usual activities fully?
- 6) How many days in total did you stay in bed all, or most of the day because of your injury or illness?

7) In general, would you say your health is

1. Excellent
2. Very good
3. Good
4. Fair
5. Poor

8) The question for female patients only

- Are your menstrual periods
1. Regular
 2. Irregular
 3. Post-menopausal

9) The reason of your visit today is

1. Physical
2. Mental
3. Both physical and mental
4. Do not know
5. MISC

D1) What is your current state of employment?

- | | | |
|--|------------------------|------------------------|
| 1. Unemployed | 2. Part time | 3. Full time |
| 4. Home duties | 5. Student (part time) | 6. Student (full time) |
| 7. Disability payments (e.g. sickness) | 8. retired | 9. MISC |

D2) Number of children: _____

D3) What is the highest level of education you have even completed?

- | | | |
|--|---------------------|-----------------------|
| 1. No formal education | 2. Primary school | 3. Junior high school |
| 4. Senior high school | 5. Two-year college | |
| 6. technical qualification/certificate/diploma | 7. University | |

D4) Are you currently

1. Never married or never de facto
2. Married or current de facto
3. Separated/divorced/Previously de facto/Widowed

D5) Including yourself, the number of people in your household is _____