IMAGES IN PSYCHIATRY: JAPAN

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CONTENTS

Part 3: Epilogue

Chapter IV

EPIDEMIOLOGY
OF PSYCHIATRIC DISORDERS
IN JAPAN

**Toshinori Kitamura, Shigeki Fujihara,
Noboru Iwata, Atsuko Tomoda, and Norito Kawakami**

*Department of Sociocultural Environmental Research,
National Institute of Mental Health*

I. Introduction

Epidemiological findings are important because they:

- provide the basic statistics of disorders;
- may be used for planning;
- may reveal biological, psychological, and social correlates of disorders, and hence possible aetiological factors;
- may enable preventive research to be undertaken.

Community rather than patient populations are usually studied in psychiatric epidemiology, because a low rate of help-seeking behavior among individuals with psychiatric disorders often makes it difficult to generalize findings obtained in clinical situations to community settings. Recent epidemiological studies in Western countries have been carried out using either questionnaires or diagnostic structured interviews. Use of these instruments enhances the reliability and validity of epidemiological diagnoses and of transcultural comparisons.

In Japan, psychiatric epidemiology is still in the "neonatal" stage. A very limited number of studies have used a structured interview or operational diagnostic criteria. Insufficient attention has often been paid to the inter-rater reliability of diagnostic interviews. Though questionnaires have often been used as screening measures, they were infrequently validated against diagnoses made using operational diagnostic criteria.

In addition to community populations, psychiatric epidemiologists study populations at risk of the disorder in question, or those in an at-risk situation. For example, because women are reported to have twice as high a risk of depression as men, some researchers have studied women exclusively (e.g. Brown and Harris 1978). Similarly, a population with experience of recent major life events is often the subject of psychiatric epidemiology, because depression is much more likely to occur after a major negative life event or difficulty.

In this chapter, we will review studies of:

- psychiatric epidemiology within a community population;
- those in an "at-risk" situation;
- validation of epidemiological questionnaires in a Japanese population.

II. Community population studies

Epidemiological studies of psychiatric disorders using structured interviews and operational diagnostic criteria among a community population are rare in Japan. However, a research group in the Department of Sociocultural Environmental Research, National Institute of Mental Health, NCNP, Japan, carried out such investigations in two different populations - one consisting of mainly middle-aged and elderly people (Kofu Study), and the other of adolescents (Gotemba Study). Both studies were conducted by trained interviewers, using an ad hoc interview guide which could yield multi-diagnostic results. This ongoing program aims to clarify the frequencies of mental disorders, their course, psychosocial correlates, and determinants of informal (e.g. friends, colleagues, and family members) and formal (e.g. mental health professionals, general practitioners) help-seeking behavior. A comprehensive interview, the Time Ordered Stress and Health Interview, was developed for the investigation. This covers demography, life events and difficulties, attributional styles, coping behaviour, social support, leisure activities, marital and social adjustment, early life experiences, self-esteem, psychological and physical perceived well-being, psychiatric present state and past history, and family history of psychiatric disorder. A set of algorithms was devised to formulate psychiatric diagnoses, using three criteria : the Diagnostic and Statistical Manual of Mental Disorders, 3rd Edition-

Revised (DSM-III-R ; American Psychiatric Association 1978), Research Diagnostic Criteria (RDC ; Spitzer et al. 1978), and Japanese Classification of Mental Disorders (JCM ; Fujinawa 1990). We will report here the results for DSM-III-R disorders.

In the Kofu Study, a total of 508 inhabitants aged 18 or more of Town A in the City of Kofu, the capital of Yamanashi Prefecture, were invited to participate in an interview. Successful interviews were carried out with 207 (41 %) subjects ; the remaining inhabitants either declined or could not be interviewed for technical reasons. When follow-up interviews were conducted nine months later, those people who had declined were once again approached, with an additional 13 subjects agreeing to participate. A total of 220 (96 men and 124 women) are the subjects of the present report. Since middle-aged and elderly people were over-represented in the first study (only 13 % of subjects were younger than 35 years), the second one focused on adolescents. Men and women who had attended either of the two junior high schools in Gotemba, a provincial town in Shizuoka Prefecture, at the foot of Mount Fuji, were invited for an interview some five years after leaving school. Out of a total of 1,521 subjects listed by the alumni association, 304 were approached and 119 were successfully interviewed. The mean age was 19; 45 were men and 74 women.

We were interested both in the lifetime prevalence (proportion of subjects who had met the criteria for each DSM-III-R disorder at least once in their life) and the 12-month incidence (proportion of subjects who had an onset of each DSM-III-R disorder during the 12-month period prior to the interview).

In the Kofu Study, the lifetime prevalence was highest for Major Depressive Episode (18.5 %), followed by Dysthymic Disorder (4.0 %) and Phobic Disorder (4.0 %) (Table 1) (Tomoda et al. 1994b). As in reports from Western countries, the prevalence of Major Depressive Episodes were about twice as high among women as among men. Dysthymic Disorder was observed only among women. The lifetime prevalence of any DSM-III-R disorder was 22 percent ; this was again higher among women than among men.

Table 1: Lifetime prevalence of DSM-III-R psychiatric disorders in Japan (%)		GAD	PAN	MDE	DYS	ME	PHO	OCD	Any
Site	**Sex & Age**	**GAD**	**PAN**	**MDE**	**DYS**	**ME**	**PHO**	**OCD**	**Any**
Kofu :	Total (N = 220)	1.8	0.9	14.0	2.3	0.9	4.1	3.6	22.3
	Male (N = 96)	2.1	1.0	7.3	0.0	1.0	4.2	4.2	15.6
	Female (N = 124)	1.6	0.8	18.5	4.0	0.8	4.0	3.2	27.4
	18-34 (N = 29)	0.0	0.0	27.6	3.4	0.0	6.9	6.9	37.9
	Male (N = 11)	0.0	0.0	18.1	0.0	0.0	9.1	18.1	27.3
	Female (N = 18)	0.0	0.0	33.3	5.6	0.0	5.6	0.0	44.4
	35-44 (N = 38)	2.6	2.6	18.4	2.6	2.6	7.9	5.3	31.6
	Male (N = 15)	0.0	6.7	13.3	0.0	0.0	13.3	6.7	33.3
	Female (N = 23)	4.3	0.0	21.7	4.3	4.3	4.3	4.3	30.4
	45-54 (N = 31)	0.0	3.2	9.7	3.2	0.0	0.0	0.0	12.9
	Male (N = 14)	0.0	0.0	7.1	0.0	0.0	0.0	0.0	7.1
	Female (N = 17)	0.0	5.9	11.8	5.9	0.0	0.0	0.0	17.6
	55-64 (N = 51)	2.0	0.0	11.8	2.0	2.0	2.0	0.0	17.6
	Male (N = 22)	4.5	0.0	4.5	0.0	4.5	0.0	0.0	13.6
	Female (N = 29)	0.0	0.0	17.2	3.4	0.0	3.4	0.0	20.7
	65 + (N = 71)	2.8	0.0	8.5	1.4	0.0	4.2	5.6	18.3
	Male (N = 34)	2.9	0.0	2.9	0.0	0.0	2.9	2.9	8.8
	Female (N = 37)	2.7	0.0	13.5	2.7	0.0	5.4	8.1	27.0
Gotemba :	Total (N = 119)	3.4	1.7	23.5	0.0	7.6	12.6	2.5	39.5
	Male (N = 45)	2.2	2.2	24.4	0.0	6.7	15.6	2.2	40.0
	Female (N = 74)	4.1	1.4	23.0	0.0	8.1	10.8	2.7	39.2

Note: GAD: Generalized Anxiety Disorder; PAN: Panic Disorder; MDE: Major Depressive Episode; DYS: Dysthymic Disorder; ME: Manic Episode; PHO: Phobic Disorder; OCD: Obsessive Compulsive Disorder; Any: Any of the Above DSM-III-R Disorders.

The lifetime prevalence of most DSM-III-R disorders did not differ between five age-cohorts (i.e. 18-34 years, 35-44 years, 45-54 years, 55-64 years, and 65 years and over), but the prevalence of Major Depressive Episode tended to be higher in younger age groups. The lifetime prevalence of Major Depressive Episode among the subjects in Gotemba was higher than that in any age-cohort in Kofu. Although the trend of higher lifetime prevalence of Major Depression among younger cohorts may be due to a bias from difficulty of recall among elder populations (Giuffra and Risch 1994), it conforms with reports from Western countries. No sex difference in the lifetime prevalence of Major Depressive Episode was observed among the adolescent population of Gotemba (men 24.4 % ; women 23.0 %), due to the equally high prevalence of this disorder among male adolescents. It is also of interest that the lifetime prevalence of

Phobic Disorder was higher among the subjects in Gotemba than in any age-cohort of Kofu.

About four percent of the subjects in Kofu and 14 percent of those in Gotemba had experienced an onset of a DSM-III-R disorder during the 12-month period prior to the interview. In the Kofu Study, the 12-month incidence of Major Depressive Episode among women was about twice as high as among men. This trend was observable among all age-cohorts of that study and of the Gotemba project. The sex difference of the 12-month incidence of any DSM-III-R disorder seemed to be due to the sex difference in Major Depressive Disorder.

Table 2: Twelve month incidence of DSM-III-R psychiatric disorders in Japan (%)								
Site	Sex & Age	GAD	PAN	MDE	DYS	ME	PHO	OCD	Any
Kofu :	Total (N = 220)	0.5	0.0	2.7	0.0	0.0	0.9	0.0	3.6
	Male (N = 96)	1.0	0.0	1.0	0.0	0.0	0.0	0.0	1.0
	Female (N = 124)	0.0	0.0	4.0	0.0	0.0	1.6	0.0	5.6
	18-34 (N = 29)	0.0	0.0	3.4	0.0	0.0	0.0	0.0	3.4
	Male (N = 11)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Female (N = 18)	0.0	0.0	5.6	0.0	0.0	0.0	0.0	5.6
	35-44 (N = 38)	0.0	0.0	2.6	0.0	0.0	2.6	0.0	5.2
	Male (N = 15)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Female (N = 23)	0.0	0.0	4.4	0.0	0.0	4.3	0.0	8.7
	45-54 (N = 31)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Male (N = 14)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Female (N = 17)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	55-64 (N = 51)	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0
	Male (N = 22)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Female (N = 29)	0.0	0.0	3.4	0.0	0.0	0.0	0.0	3.4
	65 + (N = 71)	1.4	0.0	4.2	0.0	0.0	1.4	0.0	5.6
	Male (N = 34)	2.9	0.0	2.9	0.0	0.0	0.0	0.0	2.9
	Female (N = 37)	0.0	0.0	5.4	0.0	0.0	2.7	0.0	8.1
Gotemba :	Total (N = 119)	0.0	0.0	10.1	0.0	2.5	1.7	0.0	14.3
	Male (N = 45)	0.0	0.0	4.4	0.0	2.2	2.2	0.0	8.9
	Female (N = 74)	0.0	0.0	13.5	0.0	2.7	1.4	0.0	17.6

Note: GAD: Generalized Anxiety Disorder; PAN: Panic Disorder; MDE: Major Depressive Episode; DYS: Dysthymic Disorder; ME: Manic Episode; PHO: Phobic Disorder; OCD: Obsessive Compulsive Disorder; Any: Any of the Above DSM-III-R Disorders.

Studying university students, Tadai and colleagues (1995) reported a point prevalence of DSM-III-R Obsessive Compulsive Disorder of 1.7 percent ; this prevalence seems to be slightly lower than that in both Kofu and Gotemba studies.

III. At risk situation studies

Case-control studies using structured interviews and operational diagnostic criteria for subjects suspected to be in risk situations have also been rare in Japan. However, pregnancy and child-birth are often singled out as an at-risk situation for women. Kitamura and colleagues (1993) reported an incidence of depressive illness of 16 percent during pregnancy among attenders at an antenatal clinic. Kitamura and colleagues (in preparation) also found an incidence of depression of 18 percent during the first month after the childbirth.

It is often noted that Japanese adolescents are at particular risk of developing psychopathology, possibly due to the heavy demands of education ; they are pressed to go into "good" universities because there is a belief that a person's educational background is all-important and decides his/her worth and social position. Tomoda and colleagues (1994c) investigated the 12-month depression rate among first-year university students examined by a structured interview, which diagnosed depression using the Major Depressive Episode of DSM-R. During a one-year period before and after entrance to a University, 47 percent of the 116 participants had an onset of Major Depressive Episode.

IV. Epidemiological questionnaires

In epidemiological studies, a large sample size makes feasible the use of self-rating questionnaires. They are used both for the detection of symptoms and diagnosable episodes and for assessing psychological and social variables. Many questionnaires have been translated into Japanese, and some are widely used.

However, there are some prerequisites for the use of such questionnaires, when translated into a different language. The translated version should be backtranslated to the original language to ensure accuracy of the original translation. Unfortunately, not many questionnaires used in Japan have been validated using this procedure.

As an example, the Japanese version of the General Health Questionnaires (GHQ ; Goldberg 1972) will be discussed. The GHQ is an instrument designed for the screening of non-psychotic, non-organic psychiatric morbidity among both general practice patients and community inhabitants. The original GHQ consisted of 60-, 30-,

28-, and 12-item versions. Nakagawa and Daibo (1981) administered the GHQ-60 to normal volunteers and to neurotic out-patients, finding 14/15 as the optimal cut-off point. Using RDC diagnosis as the external validator, Kitamura and colleagues (1989) reported that the cut-off point of seven or eight was optimal for the GHQ-30. Sato and colleagues (1993) also examined the GHQ-30 among attenders of general medical clinics using the Diagnostic Interview Schedule (DIS ; Robins et al. 1981) diagnosis as the external validator. The optimal cut-off point was again between seven or eight. This is three points higher than that recommended by Goldberg (1972) for a British population. The reason for this difference is difficult to explain. However, Iwata and colleagues (1994) found that Japanese people responded affirmatively to a few GHQ items to an excessive extent. Therefore, the cultural specificity of responses should be studied at the item level as well as at the total score level.

A factor analysis of the GHQ-60 administered to a Japanese adolescent population yielded four factors - social functioning, anxiety, somatic symptoms, and severe depression (Takeuchi and Kitamura 1991). A similar factor structure was reported by Iwata and Saito (1992). In their study, there were more similarities than differences between adolescents and adults in the GHQ factor structure. The above factor structure seems similar to those reported in Western countries (Goldberg and Hillier 1979), but the best GHQ items to discriminate between cases and non-cases among Japanese pregnant women were those relating to interpersonal affairs (Kitamura et al. 1989). This suggests that in a Japanese population "caseness" appears more prominent in the domain of relating to others.

Goodchild and Duncan-Jones (1985) considered that the response "no more than usual" to GHQ items describing pathology should be treated as indicating chronic illness, and proposed a revision of scoring in which "no more than usual" would be regarded as positive. However, Kitamura and colleagues (1993) applied different scoring systems of the GHQ-30 among a Japanese population, and concluded that the original GHQ scoring was no less satisfactory than any other revised systems.

The validity of self-rating questionnaires is usually expressed in terms of sensitivity (the proportion of cases correctly identified by positive scores of the questionnaire to true cases) and specificity (the proportion of scores of the questionnaire to true normal subjects). It is usual to examine the validity of a questionnaire for use on a single occasion. Thus the score of a questionnaire was set against the results of examination done by a clinician or researcher who is blind to that score. Although the validity of the GHQ on a single occasion was confirmed (Nakagawa and Daibo 1981; Kitamura et al. 1989; Sato and Takeichi 1993), the validity of the repeated use of the GHQ has only recently been studied by Kitamura and colleagues (1994a), who found that a satisfactory level of the validity of the GHQ was substantially reduced on subsequent occasions. They speculated that the reduction of the validity, when the ques-

tionnaires was used repeatedly, might be due to the subjects giving more socially desirable responses (Kitamura et al. 1994b). Further validation studies are warranted in different settings, but meanwhile, it may be recommended that a self-rating questionnaire should be validated to provide an optimal cut-off point at every phase when used repeatedly among the same subjects.

V. The future

Thus far, there has been little research on the epidemiology of psychiatric morbidity in Japan using operational diagnostic criteria and structured diagnostic interviews. Such studies as have already been carried out have all been of a small sample size : studies with large samples are therefore required.

Another important area for future research may be the etiology of minor psychiatric disorders; psychosocial factors are more likely to contribute to the onset of such disorders. it is these psychosocial factors, such as personality, coping behavior, causal attribution, support network, intimacy, life events and difficulties, and their interaction that are under stronger cultural influence.

A third area of compelling research demand is the development of diagnostic questionnaires usable for transcultural research. The requirements for such instruments are :

- use of plain language for items without any colloquial expression (e.g. "butterflies in stomach");
- availability in different languages;
- the same optimal cut-off point;
- similarly satisfactory validity across different cultures and languages;
- similar factorial structures.

Acknowledgements

44

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References

- **Brown G.W., Harris T.** Social Origin of Depression : A Study of Psychiatric Disorder in Women. *London, Tavistock, 1978.*
- **Fujinawa A.** Study on the Construction of Diagnostic Criteria of Psychiatric Disorders (in Japanese). *Ichikawa, National Institute of Mental Health (Japan), 1990.*
- **Goldberg D.P.** The Detection of Psychiatric Illness by Questionnaire : A Technique for the Identification and Assessment of Non-psychotic Psychiatric Illness. Maudsley Monograph 21. *Oxford, Oxford University Press, 1972.*
- **Goldberg D.P., Hillier V.F.** A scaled version of the General Health Questionnaire. *Psychol. Med. 1979, 9, 139-145.*
- **Giuffra L.A., Risch N.** Diminished recall and the cohort effect of major depression : a simulation study. *Psychol. Med. 1994, 24, 375-383.*
- **Goodchild M.E., Duncan-Jones P.** Chronicity and the General Health Questionnaire. *Br. J. Psychiatry 1985, 146, 55-61.*
- **Iwata N., Saito K.** The factor structure of the 28-item General Health Questionnaire when used in Japanese early adolescents and adult employees: Age- and cross-cultural comparisons. *Eur. Arch. Psychiatry Clin. Neurosci. 1992, 242, 172-178.*
- **Iwata N., Uno B., Suzuki T.** Psychometric properties of the 30-item version General Health Questionnaire in Japanese. *Jpn. J. Psychiatry Neurology 1994, 48, 547-556.*
- **Kitamura T., Shima S., Sugawara M., Toda M.A.** Temporal variation of validity of self-rating questionnaires : repeated use of the General Health Questionnaire and Zung's self-rating Depression Scale among women during antenatal and postnatal periods. *Acta. Psychiatr. Scand. 1994a, 90, 446-450.*
- **Kitamura T., Shima S., Toda M.A. et al.** Comparison of different scoring systems for the Japanese version of the General Health Questionnaire. *Psychopathology 1993, 26, 108-112.*
- **Kitamura T., Sugawara M., Aoki M., Shima S.** Validity of the Japanese version of the GHQ among antenatal clinic attendants. *Psychol. Med. 1989, 19, 507-511.*

- **Kitamura T., Toda M.A., Shima S., Sugawara M.** Validity of the repeated GHQ among pregnant women: a study in a Japanese general hospital. *Int. J. Psychiatry Med. 1994b, 24, 149-156.*
- **Nakagawa Y., Daibo I.** Validity and reliability of the Japanese version of the General Health Questionnaire and its critical application (in Japanese). *Ichikawa, National Institute of Mental Health, 1981.*
- **Robins L.E., Helzer J.E., Croughan J. et al.** National Institute Mental Health Diagnostic Interview Schedule : its history, characteristics, and validity. *Arch. Gen. Psychiatry 1981, 38, 381-389.*
- **Sato T., Takeichi M.** Lifetime prevalence of specific psychiatric disorders in a general medicine clinic. *Gen. Hosp. Psychiatry 1993, 15, 224-233.*
- **Spitzer R.L., Endicott J., Robins E.** Research Diagnostic Criteria (RDC) for a Selected Group of Functional Disorders. *New York, Biometrics Research New York State Psychiatric Institute, 1978.*
- **Takeuchi M., Kitamura T.** The factor structure of the General Health Questionnaire in a Japanese high school and University student sample. *Int. J. Soc. Psychiatry 1991, 37, 99-106.*
- **Tadai T., Nakamura M., Okazaki S. et al.** The prevalence of obsessive-compulsive disorder in Japan : A study of students using the Maudsley Obsessive-Compulsive Inventory and DSM-III-R. *Psychiatry Clin. Neurosci. 1995, 49, 39-41.*
- **Tomoda A., Iwata N., Kitamura T. et al.** Lifetime prevalence and 12-month incidence of DSM-III-R mental disorders among Japanese adolescents. *Paper in preparation.*
- **Tomoda A., Kawakami N., Yamauchi K. et al.** Lifetime prevalence and 12-month incidence of DSM-III-R mental disorders in a community sample in Japan. *Paper in preparation.*
- **Tomoda A., Mori K., Kimura M. et al.** One-year prevalence and incidence of depression in first year university students in Japan. *Paper in preparation.*