Physical Disorders Among Southeast Asian Refugee Outpatients With Psychiatric Disorders

Karen Ta, M.D.
Joseph Westermeyer, M.D., Ph.D.
John Neider, B.A.

Objective: **The study assessed the prevalence and duration of axis III physical disorders and the resulting level of disability among Southeast Asian refugee outpatients with axis I psychiatric disorders.** ***Methods:*** **A total of 266 consecutive patients who were evaluated in a psychiatric outpatient clinic were assessed for the presence of axis III conditions through questions about physical symptoms, a medical history and review of records, physical examination, and laboratory screening. The sample included 158 Hmong, 58 Laotian, 43 Vietnamese, and seven Cambodian patients.** ***Results:*** **Fifty-five percent of the patients had one or more axis III disorders, most of which were chronic and were not associated with extreme disability. Neurological conditions were most common, and the sequelae of war-related trauma were prominent. No associations were found between the presence of axis III conditions and age, gender, marital status, or ethnic group. In 48 cases, the axis III condition may have caused or exacerbated the axis I condition.** ***Conclusions:*** **Routine medical history and a physical examination, including a neurological examination, are recommended for all psychiatric patients, including outpatients. (*Psychiatric Services* 47:975–979, 1996)**

Rates of axis III physical disorders and conditions among psychiatric patients have varied with the sampling site, characteristics of the sample, and the method of study. Muecke and Krueger (1), using only physical examination and urinalysis, found axis III conditions among 20 percent of 910 new psychiatric outpatients. Among 144 chronic psychiatric outpatients studied by Barnes and associates (2), 26 percent had an axis III condition. A study by Koranyi (3) used an evaluation procedure that included an electrocardiogram and a sleep-deprived electroencephalogram; this method detected axis III conditions among 43 percent of 2,090 new outpatients.

Rates of axis III disorders in four other studies of psychiatric outpatients, day program patients, and inpatients ranged from 46 to 52 percent (4–7). One investigator reported a rate of axis III conditions of 58 percent among 36 new outpatients (8). Another study of 100 psychiatric inpatients found that 80 percent had an axis III condition (9).

Psychiatric patients who are refugees may have a lower rate of axis III conditions, compared with other psychiatric patients, by virtue of having survived flight and being on average younger than indigenous people. They could also have a higher rate of axis III disorders than other groups due to endemic infectious diseases; exposure to trauma due to combat, prisoner-of-war status, torture, or flight; or having received minimal ongoing medical attention.

Because axis III conditions can precipitate or exacerbate psychiatric conditions and complicate psychiatric assessment and treatment, we were interested in determining the rate of axis III conditions among a sample of Southeast Asian refugees patients being treated at an outpatient psychiatric clinic.

Methods

Sample

The subjects were 268 consecutive Southeast Asian refugee outpatients newly evaluated in the psychiatric clinic at the University of Minnesota Hospitals and Clinics between 1985 and 1989. Patients were referred from several sources, including social and community programs, primary care clinicians, refugee associations and leaders, and former patients. Two patients were dropped from the study because they did not have a psychiatric disorder.

The mean±SD age of the remaining 266 subjects was 33.9±14.4 years. A total of 145 were men, and 121 were women. The ethnic groups represented in the sample were Hmong, 158 subjects; Laotian, 58 subjects; Vietnamese, 43 subjects; and Cambodian, seven subjects. As for marital status, 138 were married, 72 were single, 29

The authors are affiliated with the department of psychiatry at the University of Minnesota and the Minneapolis Veterans Affairs Medical Center, 1 Veterans Drive, Minneapolis, Minnesota 55417. Address correspondence to Dr. Westermeyer.

were widowed, 13 were separated, eight were divorced, and three were in common-law unions; the marital status of three subjects was unknown.

The refugee patients were similar in age and marital status to the nonrefugee patients seen in the study setting, but the two groups differed in ethnicity, sex ratio, and mean educational level. Besides being composed of Southeast Asians, the refugee group included slightly more men than the nonrefugee group. The refugee group had a lower mean educational level, because one-fourth of the refugees were illiterate. The remaining refugee subjects ranged in educational level from a few years of grade school to college graduate.

Subjects were informed about the study's process and rationale. Each subject provided a signed consent form, a copy of which was kept by the subject.

Data collection

Procedures for assessing axis I conditions included a preassessment orientation and interview by a clinic worker from the patient's ethnic group, administration of two validated self-rating scales that had been translated into the patient's language, and a psychiatric examination and structured and unstructured interviews by a clinic psychiatrist with the assistance of an interpreter from the patient's ethnic group.

Axis III conditions were defined according to *DSM-III-R* criteria as any current physical disorder or condition that is potentially relevant to the understanding or management of the patient's psychiatric disorder. Past or nonactive physical conditions were not included unless they contributed to the current psychiatric condition or continued to produce biomedical disability.

Axis III conditions were detected using four methods. One method was for the psychiatrist to ask the patient routine questions about biomedical symptoms. The second method was for clinic staff to obtain a medical history that covered recent and current biomedical conditions diagnosed by physicians outside the clinic. The medical history included routine inquiry about trauma, surgery, medical problems, allergies, and prescribed medications, as well as review of the patient's chart and review of records relevant to the case that were obtained from outside institutions.

The third method was physical examination by clinic staff or by a medical-surgical consultant. A physical examination was routinely done if the patient had not had one since the onset of the axis I condition or within the last three months, whichever was the shorter time period; in addition, physical examinations were done if the patient had experienced a major change in medical or psychiatric symptoms. Laboratory screening, the fourth method, consisted of urinalysis, complete blood count, and tests of electrolytes, gamma glutamyl transpeptidase, alkaline phosphatase, urea nitrogen, uric acid, calcium, phosphorus, carotene, and folate. Additional studies were done only as warranted by the patient's condition; for example, skin biopsy was used to confirm presumed leprosy, and sputum studies to confirm suspected fungal and parasitic infections.

Data analysis

The first author classified axis III conditions into the ten categories shown in Table 1 using the *International Classification of Disease, Ninth Revision* (*ICD-9*). The duration of each axis III condition was rated as follows: acute, lasting less than six weeks; subacute, lasting six weeks to six months; and chronic, lasting more than six months. The patient's level of disability was determined using Social Security guidelines. A patient was considered totally disabled if he or she was unable to perform gainful work or partially disabled if he or she could perform limited or part-time work. Finally, the first author made clinical judgments about whether the patient's axis III condition or conditions caused, exacerbated, or did not cause or exacerbate the axis I condition or conditions.

The demographic characteristics of patients with an axis III condition were compared with those of patients without an axis III condition using chi square tests (with correction for continuity) for sex, ethnicity, and martial status and the Student t test for age. A significance level of .05 was selected.

Results

Among the 266 patients in the sample, 146, or 55 percent, had at least one axis III condition. A total of 186 axis III diagnoses were detected; 115 patients had one diagnosis, 22 had two, and nine had three.

Fifty-three percent of the 186 diagnoses were made using routine review of biomedical symptoms. Nervous, musculoskeletal, immunologic-dermatologic, and gastrointestinal conditions were the most common diagnoses made using this method. Thirteen percent of the 186 diagnoses, including most of the obstetric and gynecological conditions and most of the neoplasms, were detected through the medical history approach. Physical examinations uncovered 15 percent of the diagnoses, including most congenital-constitutional and endocrine conditions. Eighteen percent of the diagnoses, including most infectious conditions and malnutrition, were made by laboratory screening.

Demographic characteristics

Neither age nor sex was associated with having one or more axis III conditions. To obtain enough subjects in each category for analysis of marital status, subjects were assigned to one of three groups: single; married or common-law union; and widowed, divorced, or separated. Marital status was not associated with having an axis III condition.

Two analyses of differences between ethnic groups in the rate of axis III conditions were made. The rates for the four ethnic groups represented in the sample were compared, and the rate for the Hmong mountain-dwelling group was compared with that for the three lowland groups—Laotian, Vietnamese, and Cambodian—combined. No significant differences were found in either analysis.

Types of axis III conditions

As Table 1 shows, diagnoses involving the nervous system were most common. The single most frequent diagnosis was seizure disorder, for 14 pa-

tients. Thirteen patients, or 5 percent of the study sample, had neurological disorders that were related to brain trauma in combat or were the result of the patient's being maltreated as a prisoner. These patients presented with severe morbidity and chronic disability due to axis III organic mental syndromes associated with cognitive impairment, learning disability, organic personality disorder, or organic mood disorder.

Among patients with musculoskeletal disorders, the second most common type of diagnoses, only a few had musculoskeletal sequelae of trauma, such as shrapnel or gunshot injuries or injuries from beatings on the extremities or back while a prisoner. Infectious disease, the third most common category, included various tropical and chronic infections. Immunologic-dermatologic disorders and gastrointestinal disorders were often exacerbated by axis I conditions, especially major depressive disorder and various anxiety disorders. Malnutrition was generally subclinical and detected only as a result of routine carotene and folate screening. The absence of cardiovascular disorders was noteworthy.

Table 1

ICD-9 categories of 186 axis III diagnoses detected among 146 Southeast Asian refugees seen in a psychiatric outpatient setting

ICD-9 category	N diagnoses	% of patients	Diagnoses
Nervous	51	27	Seizure, migraine, deafness, Bell's palsy, cerebral atrophy, carpal tunnel syndrome, nerve injury, blindness, brain injury, tardive dyskinesia
Musculoskeletal	28	15	Arthritis, arthralgia, spondylosis, shoulder-hand syndrome, gout, fasciitis, rheumatoid spondylitis, lower back pain
Infectious	21	11	Hookworm, tuberculosis, amebiasis, leprosy, lung flukes, hepatitis B, otitis media, pharyngitis, bronchitis
Immunologic-dermatologic	20	11	Angioneurotic edema, allergic rhinitis, neurodermatitis, conjunctivitis, psoriasis, asthma, acne vulgaris
Obstetrical-gynecological	16	9	Pregnancy, dysmenorrhea, abortion, atrophic vaginal mucosa, infertility, post-cesarean section
Gastrointestinal	13	7	Gastritis, irritable bowel syndrome, constipation, peptic ulcer
Malnutrition	13	7	Hypocarotenemia, folate deficiency
Congenital-constitutional	11	6	Congenital heart condition, strabismus, thalassemia minor, paresis of eyelids, hemangioma
Endocrine	8	4	Hyperthyroidism, hypothyroidism, diabetes mellitus, pan-hypopituitarism, thyroid nodule
Neoplasm	5	3	Squamous cell carcinoma, cervical carcinoma, meningioma, hepatoma

Duration

Of the 186 axis III diagnoses, 29 were acute conditions. Another 29 conditions were subacute. A total of 115 diagnoses, or 62 percent of the 186 diagnoses, were chronic conditions. The duration of 13 diagnoses was unknown.

Current disability

Six patients were totally disabled as a result of their combined axis I and axis III conditions. Their diagnoses were severe seizure disorder with borderline intelligence and major depression, cerebral palsy with severe mental retardation, rheumatoid spondylitis with schizophrenia, blindness with mood disorder, and, for two patients, terminal cancer. Eighteen patients were partially disabled as a result of their combined axis I and axis III disorders. Their axis III diagnoses included primarily neurological problems and physical problems that were exacerbated by psychological conditions.

Relationship between axis I and axis III conditions

Clinical analyses by the first author suggested that the axis III condition could have caused the current axis I condition in nine cases. The nine patients all had preexisting neurological conditions affecting the brain—three patients had traumatic brain injury, three had seizure disorders, two had dementia, and one had severe vitamin deficiency.

For 39 patients, the axis III condition may have exacerbated or precipitated the psychiatric condition. These axis III conditions included major infections, such as leprosy, tuberculosis, and lung flukes; neurological conditions, such as brain trauma and seizure; obstetric and gynecological disorders, such as problems related to pregnancy; and treatable neoplasms.

For the remaining 98 patients, the axis III condition was judged not to have caused or exacerbated the axis I psychiatric disorder.

Regardless of whether the axis III condition caused or exacerbated the axis I disorder, the presence of comorbid axis I and axis III disorders often had clinical relevance. Common themes among patients with an axis III condition included the following:

- Axis I conditions exacerbated certain axis III conditions, especially allergic-immunologic, gastrointestinal, and dermatologic conditions.
- Certain axis III conditions played important roles in determining the treatment goals for the axis I condition. For example, a torture victim with organic mental syndrome could not participate usefully in psychotherapy for posttraumatic stress disorder. For patients with terminal cancer, treatment goals were aimed at symptom alleviation rather than return to employment.
- The axis III condition had to be taken into account in selecting treatment modalities for the axis I psychiatric disorder. For example, medication interactions involving the cy-

tochrome P450 enzymes, the anticholinergic and antihistaminic effects of psychotropic medications, and the psychopathogenic effects of steroid treatment needed to be considered. Treatment regimens for infectious disease could exacerbate psychiatric symptoms such as fatigue and social isolation. In addition, patients with hearing or speech problems required special communication methods.

♦ Third-party payers often did not recognize that interactions between axis I and axis III conditions might complicate or prolong psychiatric assessment and treatment. This oversight led to case-by-case problems in gaining time and funding to care for patients with both axis I and axis III diagnoses.

We also attempted to ascertain whether certain axis I diagnoses and certain axis III conditions were associated with each other. Given the large number of categories and small number of cases in each category, no statistical correlations could be identified. However, there was a trend for neurological conditions to be associated with conduct disorder or learning disorder in children and adolescents, mood disorder in young adults, and various organic diagnoses and dementia in older adults. Physical conditions that could be exacerbated by psychological factors—such as asthma, duodenal ulcer, irritable bowel, migraine, rheumatoid arthritis, and spondylitis—tended to be associated with major depression or anxiety disorder.

Discussion and conclusions

We found a prevalence rate of 55 percent for axis III conditions in this sample of Southeast Asian refugees treated in an outpatient psychiatric setting. This rate is consistent with rates found in studies of indigenous patients in Canada, England, and the United States (1–9), although it is at the high end of the range of rates found previously for psychiatric outpatients. The intensity of the biomedical evaluation we used could have resulted in a higher rate of case finding relative to other studies. However, routine laboratory screening found relatively few cases of the axis III disorders uncovered in this study (18 percent); most cases (81 percent) were detected by careful history taking and physical examination.

Cases of tropical infectious disease, such as amebiasis, hookworm, tuberculosis, and leprosy, were observed, but the rate of these "imported" infections was relatively low, a 4 percent prevalence among the 266 patients. Some patients had traumatic brain injuries related to combat and torture, but the rate of those disorders was also relatively low—5 percent of all 266 patients. Conversely, alcohol-induced traumatic brain injury, common in other published reports (10), did not occur in this sample.

The types of axis III conditions found in this refugee sample showed certain similarities and differences, compared with indigenous American psychiatric samples. For example, Karasu and associates (7) found that neurological conditions, related to alcohol abuse and trauma, were the most common axis III conditions, although the rate they found was slightly lower than the rate in our study (21 percent versus 27 percent). Cottrol and Frances (10) also observed that neurological conditions were the most common axis III condition.

As in other patient samples (11), endocrine disorders were rather infrequent among the refugee psychiatric patients in our study. Diagnoses of endocrine disorders in our sample consisted of one case of pan-hypopituitarism, which followed childbirth in Asia; one case of diabetes mellitus; and six cases of various thyroid abnormalities. Despite the low frequency of endocrine disorders, their timely recognition and treatment constituted a critical aspect of care.

Trauma among native-born Americans has been related to substance abuse (7,10), whereas trauma in our sample was related strongly to war and incarceration. We found no cases of degenerative cardiovascular disease, whereas cardiovascular diseases have accounted for many of the axis III disorders reported among patient samples in Canada, England, and the United States (1–3,6,12,13). These differences are expected in view of the relatively low rates of cardiovascular disease and alcohol abuse among Asians in the U.S. (14–16). Oral health problems, which are frequent among psychiatric inpatients (17), were uncommon in our sample.

As for duration of axis III disorders, most of the conditions we detected were chronic and recurrent. Disability due to axis III conditions tended to be of a low level and temporary. Studies of native-born patients have not addressed these two variables in ways that allow an appropriate comparison.

We judged that among the 266 patients in the sample, axis III conditions may have caused 3 percent of the axis I conditions and may have precipitated or exacerbated 15 percent of the axis I conditions. Thus a total of 18 percent of axis I conditions may have been affected by axis III conditions.

Hall and associates (9) estimated that axis III conditions caused the psychiatric disorder in 9 percent of a sample of 658 outpatients. Koran and colleagues (18) judged that axis III conditions caused 6 percent and exacerbated 9 percent of psychiatric disorder among a mixed group of inpatients and outpatients, a total of 15 percent. One investigator found a notably higher percentage of axis I conditions caused by axis III conditions (8), but the small sample size of 36 patients in that study was a fraction of the samples studied by other investigators. Axis III problems have also occurred more often among emergency psychiatric patients (19,20).

Although we did not set out to study the effects of axis I disorders on axis III conditions and their treatment, we were impressed with the prominence of such effects among the patients in the sample. Other investigators have made similar observations. Examples include the high rate of complications from hip fracture among older patients with schizophrenia (21) and prolonged medical hospitalizations of chronic or recurrent psychiatric patients with axis III conditions (22). Other findings suggest that anxiety disorders may precipitate cardiovascular disease (23).

Taken together, these data support the recommendation that clinicians should be alert to possible axis III conditions among refugee psychiatric patients who are refugees, just as such problems must be considered among older patients (24) and pa-

tients with substance abuse (25). In assessing the literature on effects of axis I disorders on axis III disorders, the reader should consider the mode of data collection used in the study, whether data collection was repeated over a long period of time, and whether minor conditions that do not require current treatment or have not contributed to patients' current morbidity were included in the analysis (18,24).

Several limitations in this study should be considered in interpreting the findings or comparing our data with those for other groups. First, we did not compare the patients in the sample with other Southeast Asians who were not patients. Second, compared with other populations, refugees may be an unusually healthy group due to having survived war and flight, or they may have a higher rate of axis III disorders due to their exposure to combat and flight trauma in Asia, exposure to infectious diseases that are more common in developing countries in the tropics, and lack of familiarity with ways to plan a healthy diet in the U.S. Third, refugee and migrant populations also tend to be young—a factor associated with a lower rate of axis III problems—although the mean age of the patients in our sample was similar to that of the nonrefugee patients treated in the study setting.

Last, the first author tabulated the axis III data, which included categorization of axis III conditions as well as clinical judgments about whether the physical disorder caused or exacerbated the axis I disorder and about the duration of these conditions and the level of disability they caused; the second author conducted the clinical evaluations on which these judgments were based. Although both steps were conducted in a routine and consistent fashion, neither the first nor the second author was blind to the presence of axis I and axis III conditions during these phases of the study. However, the third author, who analyzed the data, was blind to the presence of the two types of conditions.

Despite these limitations, our findings, along with those of others investigators, affirm the recommendations of Riba and Hale (26), who have suggested a routine medical history and physical examination, including a neurological examination, for all psychiatric patients, including outpatients. They also cautioned against "medical clearance" of psychiatric patients based on cursory medical evaluations by physicians who are unfamiliar with the "psychiatric physical examination." Psychiatrists should remain skilled in conducting physical examinations and should avoid undue reliance on nonpsychiatric physicians in the medical evaluation of psychiatric patients; the benefits include not only improved understanding of the patient, but improved patient health status over time (27). ♦

Acknowledgments

The authors thank the Laureate Psychiatric Foundation. Touxa Lyfoung, M.D., Mayka Bouafeuly Kersey, L.P.N., Chomchan Soudaly, A.M.O., and Kim Friesen, M.S.W., assisted in data collection.

References

1. Muecke LN, Krueger DW: Physical findings in a psychiatric outpatient clinic. American Journal of Psychiatry 138: 1241–1242, 1981
2. Barnes RF, Mason JC, Greer C, et al: Medical illness in chronic psychiatric outpatients. General Hospital Psychiatry 5:191–195, 1983
3. Koranyi EK: Morbidity and rate of undiagnosed physical illnesses in a psychiatric clinic population. Archives of General Psychiatry 36:414–419, 1979
4. Burke AW: Physical disorders among day hospital patients. British Journal of Psychiatry 133:22–27, 1978
5. Koranyi EK: Physical health and illness in a psychiatric outpatient department population. Canadian Psychiatric Association Journal 17(suppl 2):109–116, 1972
6. Hall RCW, Popkin MK, Devaul RA, et al: Physical illness presenting as psychiatric disease. Archives of General Psychiatry 35:1315–1320, 1978
7. Karasu TB, Waltzman SA, Lindenmayer JP, et al: The medical care of patients with psychiatric illness. Hospital and Community Psychiatry 31:463–472, 1980
8. Davies WD: Physical illness in psychiatric outpatients. British Journal of Psychiatry 111:27–33, 1965
9. Hall RCW, Leung P, Bloom JD: The use of DSM-III axis III in recording physical illness in psychiatric patients. American Journal of Psychiatry 144:1484–1486, 1980
10. Cottrol C, Frances R: Substance abuse, comorbid psychiatric disorder, and repeated traumatic injuries. Hospital and Community Psychiatry 44:715–716, 1993
11. Beardsley G, Goldstein MG: Psychological factors affecting physical condition: endocrine disease literature review. Psychosomatics 34:12–19, 1993
12. Lyness JM, Caine ED, Conwell Y, et al: Depressive symptoms, medical illness, and functional status in depressed psychiatric inpatients. American Journal of Psychiatry 150:910–915, 1993
13. Maguire GP, Granville-Grossman KL: Physical illness in psychiatric patients. British Journal of Psychiatry 114:1365–1369, 1968
14. Angel A, Armstrong M, Klatsky AL: Blood pressure among Asian-Americans living in northern California. American Journal of Cardiology 64:237–240, 1989
15. Klatsky AL, Abraham B, Siegelaub LC, et al: Racial patterns of alcohol beverage use. Alcoholism: Clinical and Experimental Research 7:372–377, 1983
16. Klatsky AL, Armstrong MA: Cardiovascular risk factors among Asian Americans. American Journal of Public Health 81:1423–1428, 1991
17. Jurek GH, Reid WH: Oral health of state hospital patients. Hospital and Community Psychiatry 44:889–891, 1993
18. Koran LM, Sox HC, Marton KI, et al: Medical evaluation of psychiatric patients: I. results in a state mental health system. Archives of General Psychiatry 46:733–740, 1989
19. Carlson RJ, Nayar N, Suk M: Physical disorders among emergency psychiatric patients. Canadian Psychiatric Association Journal 26:65–67, 1981
20. Eastwood MR, Mindham RHS, Tennant TG: The physical status of psychiatric emergencies. British Journal of Psychiatry 116:545–550, 1970
21. Yarden PE, Finkel MG, Raps CS, et al: Adverse outcome of hip fractures in older schizophrenic patients. American Journal of Psychiatry 146:377–379, 1989
22. Fulop G, Strain JJ, Fahs MC, et al: Medical disorders associated with psychiatric comorbidity and prolonged hospital stay. Hospital and Community Psychiatry 40: 80–82, 1989
23. Rahe RH: Anxiety and coronary heart disease in midlife. Journal of Clinical Psychiatry 50(Nov suppl):36–38, 1989
24. D'Ercole A, Skodol AE, Struening E, et al: Diagnosis of physical illness in psychiatric patients using axis III and a standardized medical history. Hospital and Community Psychiatry 42:395–399, 1991
25. Dalton R, Daruna JH, Strecker CD: Medical findings in school-age psychiatric inpatients grouped by private and public payment. Hospital and Community Psychiatry 44:284–286, 1993
26. Riba M, Hale M: Medical clearance: fact or fiction in the hospital emergency room? Psychosomatics 31:400–404, 1990
27. Honig A, Pop P, DeKemp E, et al: Physical illness in chronic psychiatric patients from a community psychiatric unit revisited: a three-year follow-up study. British Journal of Psychiatry 161:80–83, 1992