Characteristics of Korean-Americans With Schizophrenia: A Cross-Ethnic Comparison With African-Americans, Latinos, and Euro-Americans

by Sung-Woo Bae and John S. Brekke

Abstract

The purpose of this study was (1) to identify the demographic and psychosocial characteristics of Korean-Americans with schizophrenia, and (2) to compare the demographic and psychosocial characteristics of Korean-Americans with schizophrenia to African-American, Latino, and Euro-American individuals with schizophrenia. Based on current models of psychosocial functioning in schizophrenia, four dimensions—clinical status, functional status, subjective experience, and community risk—were examined and compared across the ethnic groups. Data on 223 individuals diagnosed with schizophrenia who were Korean-American (n = 40), Euro-American (n = 95), African-American (n = 60), and Latino (n = 28) were gathered in face-to-face interviews. All of the subjects were engaged in outpatient treatment. After controlling for sociodemographic variables, the main findings were as follows: (1) while the Korean-Americans were the least acculturated, their symptom levels and clinical status were highly comparable with those of the other ethnic groups; (2) based on living situation, family contact, social functioning, activities of daily living, and vocational data, the Korean-Americans showed a stronger familial orientation, lower social initiation, and higher affiliative qualities than other groups; (3) the Korean-American sample had comparable levels of self-esteem but reported lower satisfaction with life than the other ethnic groups. Minority status did not confound these findings. It is concluded that the psychosocial profile of the Korean-Americans was strongly influenced by their traditional and collectivistic cultural orientation. At the same time, the lower levels of life satisfaction could indicate that they experience difficulties in adjusting to Western society. Considering the Korean-Americans' strong tendency to maintain a collectivistic cultural orientation, mental health services need to be congruent with their cultural expectations. Interventions should also identify risk factors associated with lower life satisfaction. Several research implications are discussed.

Keywords: schizophrenia, Korean-American, cross-cultural, ethnic minority, psychosocial.

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There is growing interest in how ethnocultural factors influence schizophrenia and its care (NIMH 2000). For example, a body of research has found cross-ethnic differences in symptom expression among individuals diagnosed with schizophrenia (see Dinges and Cherry 1995 for a review; Brekke and Barrio 1997). Ethnic group differences among schizophrenia patients have been noted in other areas such as diagnostic variability (Mukherjee et al. 1983; Coleman and Baker 1994), the illness experience of the patient and family (Jenkins 1988; Swerdlow 1992; Jenkins 1997), family involvement (Guarnaccia et al. 1992; Guarnaccia and Parra 1996), and responsiveness to psychosocial intervention (Telles et al. 1995; Phillips et al. 2001). These findings support the notion that different sociocultural and ethnic backgrounds may influence the expression, course, and treatment of schizophrenia (Lin and Kleinman 1988; Kleinman 1988; Kirmayer 1989; Weisman 1997; Hopper and Wanderling 2000). However, cross-ethnic studies of schizophrenia in the United States have at least one important limitation. Most of the studies have compared Caucasians with either African-American or Hispanic samples. Considering that Asian-Americans have distinctive sociocultural characteristics, with unique language, history, and socioeconomic backgrounds, it is possible that these factors may be reflected among individuals with schizophrenia. However, very little is known about Asian-Americans with schizophrenia. The present study is aimed at addressing this gap in the literature.

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Research on Asian-Americans With Schizophrenia

Literature on schizophrenia in the Asian-American population was reviewed in four areas: treated cases, family involvement, clinical studies, and outcome studies. Some studies conducted in Asian countries were also reviewed.

Treated Cases. While the only epidemiological survey of Asian-Americans and mental health addressed depression among Chinese-Americans (Takeuchi et al. 1998), several attempts have been made to indirectly estimate the prevalence of schizophrenia among Asian groups by studying patients who received services in public treatment settings. These studies (Kinzie and Tseng 1978; Leong 1989; Flaskerud and Hu 1992) have consistently found that Asian-Americans have higher percentages of people who are diagnosed with schizophrenia when compared with other ethnic groups. It has been suggested that the findings might be attributable to Asian-Americans' unique help-seeking behavior as Asian patients tended to be kept within the family for prolonged periods of time until family caregiving efforts proved unsuccessful (Lin et al. 1978; Lin et al. 1982). Consequently, those who made contact with the mental health system exhibited a greater level of disturbance than others in the client population (Sue and Morishima 1982).

Family Involvement. While a strong tie between the family members and their ill relative has been reported among African-American and Hispanic groups (Guarnaccia et al. 1992; Guarnaccia and Parra 1996), a study of Asian-American and Caucasian families found that Asian families were more likely to accompany the schizophrenia patient on clinic visits and to actively participate in treatment decisions (Lin et al. 1991).

Clinical Studies. Cross-ethnic studies of schizophrenia in the United States have focused primarily on the expression of symptoms; however, a few studies have examined symptom expression among Asian-Americans. These national and cross-national studies have found that the expression of symptoms varies within Asian-American subgroups (Enright and Jaeckle 1963; Leong 1989; Kim et al. 1993). It was concluded that the differences in symptom expression could not be explained without taking sociocultural and political backgrounds into account.

Asian-Americans' neuroleptic response has also received attention. Studies have reported that Asian-Americans, compared with whites, require lower doses of neuroleptics to achieve a satisfactory clinical response (Lin and Finder 1983; Lin et al. 1989; Matsuda et al. 1996; Ruiz et al. 1996) and that Asian patients are more likely than whites to experience side effects when treated with comparable doses of medication (Binder and Levy 1981; Lin et al. 1989). Lin and Cheung (1999) suggested that such findings might stem from ethnic differences in drug metabolism and pharmacodynamics.

Outcome Studies. Although no long-term outcome studies have been conducted on Asian-Americans, cross-national studies including Asian subjects revealed notable differences in the course and outcome of schizophrenia. Strong evidence for differential outcomes across countries can be found in the World Health Organization (WHO) studies (WHO 1979; Sartorius et al. 1986; Hopper and Wanderling 2000). Two important findings from these studies were that (1) the incidence rates of schizophrenia were highly consistent across the cultures, and (2) schizophrenia patients from developing countries had a significantly better course and outcome than patients in industrialized countries (see also Hopper and Wanderling 2000). These more favorable treatment outcomes found in developing countries have led researchers to speculate that collectivistic/sociocentric cultures in which interdependence, family integrity, and harmonious interpersonal relationships are more emphasized might provide a buffering or protective function (Triandis 1988, 1990; Triandis et al. 1988, 1993; Kagitcibasi and Berry 1989).

Although the WHO studies' methodologies and collectivistic/sociocentric hypothesis were challenged by some researchers (Cohen 1992; Edgerton and Cohen 1994), one recent study in the United States (Brekke and Barrio 1997) supported the collectivistic/sociocentric hypothesis in schizophrenia. Thus, there is some evidence to support the theory that traditional cultures favor symptom recovery and the restoration of function (Sartorius et al. 1986; Jablensky 1989).

This literature on Asian-Americans with schizophrenia shows that their illness cannot be fully understood unless biological, psychological, and social factors are considered. It is also clear, however, that the empirical literature on Asian-Americans with schizophrenia is still in its infancy. For example, we do not know of any study that compares Asian-Americans with schizophrenia to other ethnic minority or majority groups in terms of their psychosocial characteristics. There is a pressing need to increase our understanding of the unique characteristics and needs of this population. This will facilitate the identification, engagement, assessment, and successful treatment of Asian-Americans with schizophrenia. Therefore, the purpose of this study was to systematically examine Korean-Americans diagnosed with schizophrenia in comparison with members of three other major ethnic groups in the United States: Caucasians (Euro-Americans), African-Americans, and Latinos.

This study has several important characteristics. First, cross-ethnic studies involving Asian-American subjects need to deal with the heterogeneity of the Asian-American population (Uba 1994). To address this issue, this study focused on a specific ethnic group, Korean-Americans.

In this regard, Korean-Americans have some unique characteristics. According to the U.S. Immigration and Naturalization Service (INS), there were about 780,000 Korean-American legal immigrants residing in the United States in 1996 (NAKASEC 1998). They tend to reside overwhelmingly in urban areas, and of all states, California has the most Korean-Americans. The current Korean-American population in the United States is largely here because of the Immigration Act of 1965, which facilitated family reunion and migration of professional workers. As a result, most Korean-Americans (71%) in the United States are foreign-born (INS 1996, cited in NAKASEC 1998). Because the vast majority of the Korean-Americans are recent immigrants, there has been a paucity of literature and few data on Korean-Americans' mental health. This is especially true for Korean-Americans diagnosed with schizophrenia.

A second important feature of this study is that four critical dimensions of schizophrenia—clinical status, functional status, subjective experience, and community risk—were examined (Hargreaves and Shumway 1989; NIMH 1991; Attkisson et al. 1992; Brekke et al. 1993; Rosenblatt and Attkisson 1993; Brekke and Long 2000). Third, the design of this study included three minority groups and one majority group, which helped to control for the confounding effects of minority status (Butcher et al. 1983; Neff and Hoppe 1993). Finally, existing studies have tended not to control for sociodemographic variables, which confounds ethnic and sociodemographic differences (Kagitcibasi and Berry 1989; Cheung and Snowden 1990; Betancourt et al. 1992; Dassori et al. 1995). This study statistically controlled for several sociodemographic variables, including gender, age, and education level.

The present study had the following aims: (1) to identify the demographic and psychosocial characteristics of Korean-Americans with schizophrenia, and (2) to compare the demographic and psychosocial characteristics of Korean-Americans with schizophrenia with African-American, Latino, and Euro-American individuals with schizophrenia.

Methods

Sample. The analyses in this study were based on data from two different sources using an identical measurement protocol. Forty Korean-American subjects receiving psychiatric treatment from a community mental health clinic in urban Los Angeles, CA, were interviewed in 1998. After informed consent was obtained, study subjects were interviewed at the clinic where they received outpatient treatment. All subjects were diagnosed with either schizophrenia or schizoaffective disorder by mental health professionals using *DSM–III–R* criteria (APA 1987). At the time of the interview, diagnoses were confirmed by the chief psychiatrist at the agency. Data for the sample of Caucasians, African-Americans, and Latinos came from an existing data source (Brekke and Barrio 1997). A total of 183 subjects originally participated in a longitudinal study of three different models of community-based mental health care. The study was conducted in urban Los Angeles between 1989 and 1994 (Brekke et al. 1997; Brekke et al. 1999). The present study used baseline interview data from these subjects. All subjects were diagnosed with either schizophrenia or schizoaffective disorder according to Research Diagnostic Criteria (Spitzer et al. 1977; Endicott and Spitzer 1978) by a Ph.D.-level clinician trained in the use of the Schedule of Affective Disorders and Schizophrenia (Endicott and Spitzer 1978).

The study admission criteria were identical for all subjects: (1) a diagnosis of schizophrenia or schizoaffective disorder, (2) age between 18 and 60 years old, and (3) neither a diagnosis of mental retardation or organic brain syndrome, nor a diagnosis of substance dependence. Additionally, nearly all subjects had received publicly funded psychiatric care in the community, and all were currently engaged in outpatient treatment. No subject was hospitalized at the time of the interview, and all subjects were living in noninstitutional community settings when the data were gathered.

Measures. In this study, we used the model of psychosocial functioning in schizophrenia proposed by Brekke and Long (2000). The model contains three domains: clinical, functional, and subjective experience. We added a fourth domain, community risk, advocated by Rosenblatt and Attkisson (1993). The specific domain indicators are presented in the Results section and in tables 2 and 3. The following measures were used across all ethnic groups.

Brief Symptom Inventory (BSI). The BSI is a 53-item scale that measures mental health symptomatology (Derogatis and Melisaratos 1983). For the Korean-American sample, the Korean version of the BSI (Kim et al. 1989) was used. Cronbach's alpha for the non-Korean sample (English version) was 0.96, and the alpha for the Korean version was 0.97.

Community Adjustment Form (CAF). The CAF (Test et al. 1991) is a semistructured interview that gathers data in 17 areas of community adjustment. The CAF avoids subjective interviewer ratings by gathering behavioral event data based on clients' self-report. Three items on social functioning from the Social Adjustment Scale II

(Schooler et al. 1997) were added to the CAF. Because the CAF is used in an interview format, establishing an acceptable level of interrater reliability is crucial. For the non-Korean sample, interrater reliability using kappa or intraclass correlation (ICC) statistics was assessed with 22 client interviews after extensive training. Interrater reliability was very high, ranging from 0.88 to 1 (Brekke et al. 1993). For the Korean sample, two sets of reliability were examined. First, between-group reliability involved checking agreement between the Korean interviewer and the Caucasian interviewer while interviewing non-Korean subjects. Second, within-group reliability was checked between two Korean interviewers while interviewing Korean-American subjects. Between-group interrater reliability with nine client interviews was satisfactory, ranging from 0.72 to 1 (average = 0.92). Within-group interrater reliability with six client interviews was also acceptable, ranging from 0.69 to 1 (average = 0.93).

Satisfaction With Life (SWL). The SWL (Stein and Test 1980) is a 21-item self-report measure that targets subjective satisfaction with one's living situation, work, social life, and psychological conditions. The alpha for the non-Korean sample was 0.89, and the alpha for the Korean-American sample was 0.91.

Self-Esteem Measures. The Index of Self-Esteem (ISE) (Hudson 1982) was used to measure self-esteem for the non-Korean sample. The ISE is a 25-item self-report scale designed for use with clinical populations. Because of translation restrictions imposed by the ISE's author, the Self-Esteem Rating Scale (SERS) (Nugent and Thomas 1993) was used to measure self-esteem for the Korean-American sample. The SERS is a 40-item self-report scale that was derived from the ISE. In a previous study using these two instruments, we found a significant positive item bias in measuring self-esteem among Korean-Americans (Bae and Brekke, in press). Therefore, in this study we used only the negatively worded items from the SERS to compare the ethnic groups. While this can give us only an approximation of the actual levels of self-esteem, the negative items correlate significantly (Pearson $r = 0.74$) with the total self-esteem score. The alpha coefficient for the selected items of the ISE with non-Korean subjects was 0.82, and the alpha for the Korean-American subjects was 0.89.

Translation of the Measures. Except for the BSI, whose Korean version was available, all measures used in this study were translated into Korean before use with the Korean-American sample. Based on suggestions from the literature (Brislin et al. 1973; Brislin 1980), the measures were translated into Korean using both back-translation and committee techniques. First, the scale was translated into Korean by the first author. Then, several native speakers of Korean, who were blind to the original measures, performed a back-translation into English. Next, several revisions were made by incorporating feedback from four native speakers of Korean who were also mental health professionals in the United States. The final version was again back-translated, and the comparability of the two versions was checked by an expert in schizophrenia research.

Acculturation. Although this study did not employ an acculturation measure, it was determined that the Latinos were well acculturated. Eighty-seven percent of the sample was born in the United States. All Latino subjects were interviewed in English, and 100 percent had been exposed to the American public education system (Brekke and Barrio 1997). Likewise, it was determined that the Korean-American sample was the least acculturated group. All the subjects (100%) were born in Korea, and 78 percent of the sample completed their highest levels of education in Korea. In addition, 93 percent of the sample either did not speak English, or preferred to be interviewed in Korean.

Data Analysis. The data were generally analyzed with analysis of covariance (ANCOVA) to compare group means adjusted for the sociodemographic variables of gender, age, and education level unless otherwise specified. Post hoc pairwise comparisons were conducted using the Tukey test when significant F test results were obtained. To provide some protection against the inflation of the type 1 error rate due to multiple comparisons within psychosocial domains, a procedure advocated by Dar et al. (1994) was used. Using this procedure, when more than one variable was used to reflect a domain, the alpha criterion of 0.05 was divided by the number of indicators in that domain, and this Bonferroni-corrected alpha level was used for testing the statistical significance of variables in that domain.

Results

Sample Characteristics. The demographic characteristics of the sample ($n = 223$) are presented in table 1. Forty (17.9%) of the subjects were Korean-Americans, 95 (42.6%) were Caucasians, 60 (26.9%) were African-Americans, and 28 (12.6%) were Latinos. Exactly 71.7 percent of the sample was male, with a mean age of 34.3 (standard deviation [SD] = 7.7 years) and a mean education of 12.3 years (SD = 2.0). While there was no difference across ethnic groups with respect to gender, both the Korean-American and the Caucasian samples had higher educational attainment than the Latino sample. The Korean-American subjects were significantly older than

Table 1. Demographic characteristics by ethnic groups

	Korean-American (1) (*n* = 40)	Caucasian (2) (*n* = 95)	African-American (3) (*n* = 60)	Latino (4) (*n* = 28)	Test statistics	Contrast
Gender, *n* (%)						
Male	23 (57.5)	69 (72.6)	44 (73.3)	24 (85.7)	$\chi^2 = 6.8$	*ns*
Female	17 (42.5)	26 (27.4)	16 (26.7)	4 (14.3)	*df* = 3	
Age, mean (SD)	39.4 (8.7)	33.9 (7.0)	33.6 (7.2)	29.8 (5.6)	F = 10.6 *df* = 3, 219 *p* < 0.001	1 > 2,3,4 2 > 4
Education, mean (SD)	13.0 (2.1)	12.7 (2.1)	12.0 (1.5)	10.9 (2.3)	F = 8.0 *df* = 3, 219 *p* < 0.001	1,2 > 4
Marital status, *n* (%)[1]						
Single	27 (67.5)	82 (86.3)	46 (76.7)	25 (89.3)		
Married	2 (5.0)	—	—	—	—	—
Other[2]	11 (27.5)	13 (13.7)	14 (23.3)	3 (10.7)		

Note.—SD = standard deviation.

[1] Chi-square test result was not reported because five cells (42%) have less than the minimum frequency of five required to make an accurate inference.

[2] Subjects who were separated, divorced, or widowed.

subjects from the other three ethnic groups, and the Caucasian sample was also older than the Latino sample. At the time of the interview, a majority (80.7%) of the sample had never been married.

Clinical Status. Cross-ethnic comparisons of clinical status were conducted using four indicators: (1) number of days in psychiatric hospitals, (2) frequency of psychiatric hospital admissions, (3) days on medications, and (4) symptomatology. The BSI was used to examine each ethnic group's symptomatology, and the three other indicators were extracted from the CAF for the previous 180 days up to the date of the interview.

The ANCOVA analysis comparing symptomatology after controlling for education, gender, and age did not reveal any differences across the ethnic groups (F = 0.25, *df* = 3, 211; *ns*). The Korean-Americans (mean [M] = 60.34, standard error [SE] = 6.64) had a level of overall symptomatology comparable with that of Caucasians (M = 58.34, SE = 4.12), African-Americans (M = 56.40, SE = 5.24), and Latinos (M = 64.13, SE = 8.20). Nine subscales of the BSI were also compared to examine ethnic group differences in symptom expression. Multivariate analysis of covariance using the nine factors as dependent variables after controlling for education, gender, and age did not show any significant ethnic group differences (Wilks' lambda = 0.87, F = 1.11, *df* = 27, 593; *ns*). Further cross-ethnic analyses with three other indicators—including days in psychiatric hospitals (F = 0.30, *df* = 3, 215; *ns*), frequency of hospital admissions (F = 1.01, *df* = 3, 216; *ns*), and days on medication during the previous 6 months (F = 1.28, *df* = 3, 215; *ns*)—were also not statistically significant. Therefore, the analyses of clinical variables were marked by strong similarities between the ethnic groups.

Psychosocial Functioning. The present study examined living situation, employment functioning, social functioning, and activities of daily living as indicators of psychosocial functioning (tables 2 and 3).

Living situation. Data on living situations were extracted from the CAF, which covered the 6 months preceding the interview. The subjects had changed their type of living situation two times on average, with no ethnic group differences. The comparisons of the type of living situations used the category in which each subject spent the longest time during the 6-month period covered in this study. As shown in table 2, there was a significant cross-ethnic difference in living situation. The proportion of people who had been in independent living was very similar for the non-Korean samples, ranging from 14 percent (Latinos) to 17 percent (African-Americans), while about 5 percent of the Korean-American sample lived independently. Residential programs in the community were the most frequent type of living arrangement for both African-American and Caucasian samples. On the other hand, a much larger percentage of Korean-Americans and Latinos lived with their families. Slightly less than half (43%) of the Latino sample lived with their families, while the majority (65%) of the Korean-American sample lived with their families.

Table 2. Living situation, contact with family, and employment functioning

	Korean-American (1) (n = 40)	Caucasian (2) (n = 95)	African-American (3) (n = 60)	Latino (4) (n = 28)	Test statistics	Contrast
Living situation						
Change in living situation, adjusted mean (SE)	1.7 (0.3)	2.0 (0.2)	2.3 (0.22)	1.9 (0.3)	F = 0.9 (ANCOVA[1]) df = 3, 216	*ns*
Type of living situation, n (%)						
Independent living	2 (5.0)	14 (14.7)[2]	10 (16.7)	4 (14.3)	χ^2 = 54.92	
Living with family	26 (65.0)	9 (9.5)	9 (15.0)	12 (42.9)	df = 6	
Residential program[3]	12 (30.0)	72 (75.8)	41 (68.3)	12 (42.9)	$p < 0.001$[4]	
Contact with family						
Number of contacts with parents, adjusted mean (SE)[5]	28.0 (5.6)	11.0 (2.0)	11.8 (2.5)	14.5 (4.3)	F = 3.0 (ANCOVA[1]) df = 3, 174 $p < 0.035$	1 > 2,3
Number of contacts with relatives, adjusted mean (SE)	13.0 (4.6)	15.1 (2.7)	21.9 (3.4)	24.9 (5.3)	F = 1.6 (ANCOVA[1]) df = 3, 213	*ns*
Employment functioning						
Any employment history, n (%)	17 (42.5)	47 (49.5)	28 (46.7)	17 (60.7)	χ^2 = 2.4 df = 3	*ns*
Total days worked, adjusted mean (SE)	71.3 (12.1)	60.5 (7.4)	61.3 (9.4)	51.1 (12.5)	F = 0.4 (ANCOVA[1]) df = 3, 102	*ns*
Total hrs worked, adjusted mean (SE)	365.3 (62.9)	226.6 (38.2)	180.4 (48.7)	211.5 (65.1)	F = 1.9 (ANCOVA[1]) df = 3, 102	*ns*
Employment setting, n (%)						
Competitive/student[6]	14 (35.0)	19 (20.0)	14 (23.3)	9 (32.1)		
Institutional[6]	1 (2.5)	17 (17.9)	8 (13.3)	2 (7.1)		
Family business[6]	4 (10.0)	—	1 (1.7)	—		
Other[6,7]	2 (5.0)	15 (15.8)	9 (15.0)	6 (21.4)		
Unemployed	23 (57.5)	48 (50.5)	32 (53.3)	11 (39.3)		

Note.—ANCOVA = analysis of covariance; SE = standard error. Percentages may not add up to 100 due to rounding errors.

[1] Means were adjusted after controlling for gender, education, and age.

[2] One subject was homeless for the whole study interview period.

[3] Four subjects, one in each ethnic group, spent their longest time in inpatient hospitals during the 6-month period.

[4] Results are statistically significant after correction for multiple comparisons.

[5] Analyses with subjects who did not live with family for the whole study period.

[6] Except for the Latino sample, some subjects had more than one employment setting. Therefore, frequency and percentage will add up to more than 100 percent. This does not apply to the unemployed category, which refers to the subjects who were unemployed for the whole study interview period.

[7] Other category includes (1) paid or volunteer work in the rehabilitation agency, (2) paid or volunteer work under mental helath staff supervision in the community, and (3) volunteer work in the community.

Excluding subjects who lived with their families for the whole 180-day period, the number of contacts in the form of visits and/or phone calls between subjects and parents and other relatives during the previous 60 days was compared. The results did not show any ethnic group differences in the number of contacts between subjects and all relatives (table 2). However, Korean-American subjects (when not living at home) had a statistically significantly greater number of contacts with their parents than Caucasians and African-Americans.

Employment functioning. Employment functioning consisted of three indicators extracted from the CAF: (1)

Table 3. Analyses of social functioning, subjective experience, and community risk indicators

Variables, adjusted mean (SE)	Korean-American (1)	Caucasian (2)	African-American (3)	Latino (4)	ANCOVA[1] (*df*)	Contrast
Social functioning						
Friends						
Number of close friends	1.4 (0.2)	1.3 (0.2)	1.4 (0.2)	1.5 (0.3)	F = 0.2 (3, 216)	*ns*
Contact with each friend[2]	16.4 (10.4)	55.2 (6.0)	52.2 (7.4)	40.5 (10.7)	F = 4.0 (3, 150) $p < 0.01$[3]	2,3 > 1
Symmetry of interaction[2]	0.97 (0.14)	1.54 (0.08)	1.69 (0.10)	1.32 (0.14)	F = 6.6 (3, 150) $p < 0.001$[3]	2,3 > 1 3 > 4
Quality of social contact					F = 2.8 (3, 216)	
Degree of activity	1.72 (0.2)	1.71 (0.1)	1.16 (0.2)	1.53 (0.2)	$p < 0.04$	1,2 > 3
Social comfort	0.65 (0.11)	0.76 (0.07)	0.66 (0.09)	0.54 (0.13)	F = 0.9 (3, 216)	*ns*
Social friction	0.4 (0.2)	1.3 (0.1)	1.1 (0.2)	0.7 (0.2)	F = 6.1 (3, 216) $p < 0.001$[3]	2,3 > 1 2 > 4
Social satisfaction[4]	5.45 (0.63)	7.50 (0.39)	7.22 (0.50)	7.66 (0.81)	F = 2.7 (3, 206) $p < 0.05$	2,3,4 > 1
Social competence	9.7 (0.3)	6.3 (0.2)	7.3 (0.2)	7.2 (0.4)	F = 29.5 (3, 216) $p < 0.001$	1 > 2,3,4 3 > 2
Activities of daily living						
Personal hygiene	8.2 (0.2)	5.2 (0.1)	5.6 (0.2)	5.6 (0.3)	F = 46.8 (3, 216) $p < 0.001$[3]	1 > 2,3,4
Daily coping activities	6.7 (0.2)	6.9 (0.1)	7.2 (0.1)	7.4 (0.2)	F = 2.3 (3, 216)	*ns*
Subjective experience						
Self-esteem (ISE and SERS)[5]	45.96 (1.33)	42.68 (0.83)	45.25 (1.06)	45.84 (1.78)	F = 2.4[6] (3, 204)	*ns*
Satisfaction with life (SWL)	34.9 (2.0)	40.2 (1.3)	37.7 (1.6)	45.5 (2.6)	F = 3.7[6] (3, 204) $p < 0.01$[3]	2,4 > 1 4 > 3
Community risk						
Substance use	3.6 (0.2)	4.0 (0.1)	4.6 (0.2)	3.9 (0.3)	F = 4.5 (3, 215) $p < 0.01$	3 > 1,2,4

Note.—ANCOVA = analysis of covariance; ISE = index of self-esteem; SE = standard error; SERS = Self-Esteem Rating Scale; SWL = Satisfaction With Life.

[1] Means were adjusted after controlling for gender, education, and age.

[2] Subjects who reported to have no close friend(s) were excluded from the analyses.

[3] Results are statistically significant after correction for multiple comparisons.

[4] Four social items' total score (items 7–10) from the SWL scale.

[5] Based on 13 negative items that are either identical or comparable in meaning from the SERS and the ISE.

[6] Means were adjusted after controlling for gender, education, age, and symptom severity.

proportion of people who engaged in any type of employment over the previous 6-month period, (2) total days worked, and (3) total hours worked (table 2). Overall, about one-half of the sample (n = 109, 49%) had some type of employment over the 180-day period. A cross-ethnic comparison of the proportion of people who had any type of employment was not significant. Subjects worked an average of approximately 31 days (SD = 45.8) and 114 hours (SD = 213), with no ethnic group differences. While for all ethnic groups the most common employment setting was competitive employment/student, ranging from 20 percent (Caucasians) to 35 percent (Korean-Americans), one unique employment setting was observed among the Korean-American sample. Out of 17 Korean-American subjects who had any type of employment history, four subjects (24%) were employed and earned

income by working in the family-owned business. Only 1 subject out of the 99 (1%) subjects working in the other three ethnic groups was employed in the family business.

Social functioning. Social functioning was examined using the following indicators: (1) number of close friends and number of contacts with each friend, (2) symmetry of friend relationships, (3) satisfaction with social life, (4) quality of social contact, and (5) social competence (Brekke et al. 2002). The analyses of social functioning variables are presented in table 3. There were no ethnic group differences in the number of close friends; however, the frequency of contacts with close friends revealed that Korean-Americans made fewer friend contacts than all of the other groups and significantly less than Caucasians and African-Americans. The Korean-Americans had the lowest social symmetry scores, which were significantly lower than those of the Caucasians and African-Americans. The Korean-Americans and Caucasians were both significantly less socially active than the African-Americans, who showed the highest degree of social activity. There was no cross-ethnic difference in the level of social comfort, but the Korean-Americans had significantly lower social friction than Caucasians and African-Americans. In terms of satisfaction with one's social interactions, Korean-Americans were significantly lower than the other three ethnic groups. The Korean-Americans had significantly higher social competence scores than all the other ethnic groups.

Activities of daily living. Activities of daily living consisted of two variables, personal hygiene and daily coping activities. Personal hygiene measured personal grooming and general appearance. Daily coping activities measured the subjects' levels of independence in performing daily activities such as doing laundry, shopping for groceries, and using transportation.

While the level of daily coping activities did not show any ethnic group differences, the Korean-Americans maintained significantly better hygiene than the other groups. Because the data analyses so far have indicated that Korean-American families were quite involved in the caregiving process, further analyses were done by grouping subjects into whether they lived with their families or not and investigating whether this was related to differences in personal hygiene. The results were in the expected direction for the Korean-American sample, showing that subjects who lived with their families (M = 8.6, SD = 1.1) showed better personal hygiene than those who lived elsewhere (M = 7.1, SD = 2.2; $t = 2.3$, $df = 16$; $p < 0.05$). However, this was not the case for the other ethnic groups.

Subjective Experience. There were two indicators of subjective experience: self-esteem and satisfaction with life. In terms of self-esteem, table 3 presents the results using the 13 negatively worded items, controlling for sociodemographic variables and symptom severity. The Korean-Americans were not different from the other groups on these self-esteem items. Given the positive item bias found in self-esteem data (Bae and Brekke, in press), all items from the SWL were examined for possible response bias. The data did not show any systematic response tendencies among the ethnic groups. In the analyses of the SWL data, the BSI total score was also used as a covariate. As shown in table 3, the Korean-American group reported the lowest life satisfaction among the ethnic groups, which was significantly lower than that of the Caucasian and the Latino groups.

Community Risk. The present study examined substance use as a risk factor associated with living in the community. Substance use was measured with the three-item subscale from the CAF consisting of alcohol, marijuana, and other street-drug use in the previous 6 months. African-Americans had significantly higher substance use compared with all other ethnic groups.

Discussion

This was the first study in the United States to provide a detailed profile of Korean-American individuals diagnosed with schizophrenia and to compare them with other ethnic groups. This study was also unique because several critical dimensions of psychosocial functioning were examined and because minority status was not confounded with ethnicity. There were several major findings. First, the Korean-Americans' clinical status was highly comparable with that of the other ethnic groups. Although Leong's (1989) study reported that Chinese and Japanese-Americans had more benign symptom profiles than Caucasians, the findings were not replicated in this sample of Korean-Americans. It is possible that variations such as geographical location, acculturation levels, and diagnostic criteria may account for the different findings; however, it could also indicate that research combining Asian-Americans into one group may have limited external validity. Research on Asian-Americans needs to focus on examining each ethnic group in order to deal with the diversity and heterogeneity of the Asian-American population. Alternatively, the comparable clinical status across the ethnic groups may have been explained by two other factors: (1) because all the subjects in this study were diagnosed with schizophrenia and were treated in the public mental health system, the similarities among the ethnic groups could be the result of mental health care system policy and orientation; and (2) the Korean-American sample's culture-specific symptom expression or manifestations of illness may not have been fully captured with the BSI, which was originally developed for a Western population (see Lin 1997 for a review).

A second major finding was that the Korean-Americans showed unique psychosocial characteristics. First, in comparison with the other groups, Korean-American subjects tended to live with their families more and to maintain more parental contact when not living with the family. Twenty-four percent of the working Korean sample worked in a family business, compared with 1 percent of the other groups. Second, in terms of social functioning, the following pattern emerged. The size of the nonkin friend network was the same across ethnic groups. However, in terms of variables associated with the initiation of social activities, such as the number of contacts with friends, social activity, and social symmetry, the Korean-Americans were characterized by less social initiation. In terms of the affiliative quality of their social interactions, the Korean-Americans showed less social friction, higher social competence, and equal social comfort compared with the other ethnic groups. Concerning satisfaction with their social lives, the Korean-Americans had significantly lower scores. Third, concerning subjective experience, while self-esteem scores were not significantly different across the ethnic groups, the Korean-Americans had the lowest levels of general life satisfaction. Finally, there were no differences in work functioning or daily coping activities across the ethnic groups, but the Korean-Americans had significantly higher personal hygiene than the other ethnic groups, and this was possibly related to living with their families.

These results lead to several general conclusions. Before proceeding, however, it must be noted that because many of the differences occurred between the ethnic minority groups, as well as across majority and minority groups, minority status cannot explain the findings. Also, sociodemographic differences were statistically controlled. Therefore, it can be argued that the observed cross-ethnic differences could reflect the influence of cultural orientation (Butcher et al. 1983; Neff and Hoppe 1993).

Our first general conclusion is that the Korean-Americans with schizophrenia were highly family oriented. Korean-Americans' strong familial orientation has been well documented (Hong 1982; Min 1988; Kim 1996). Second, a notable pattern of social interaction emerged for the Korean-Americans. It consisted of similar network size, but with lower social initiation and higher affiliative quality than the other groups. Maintaining harmony in social interactions and showing less social initiative is a common characteristic of several cultures, but these attributes are strongly emphasized in Asian cultures (Miyamoto 1986–1987; Markus and Kitayama 1991; Kwan et al. 1997). Consequently, Asians and Asian-Americans tend to emphasize self-effacing behaviors by denying positive attributes and being quiet in social interactions in order not to call undue attention to themselves (Abe and Zane 1990). They are also less likely to initiate social interactions. These self-effacing behaviors are valued because they shift the focus of social interactions toward others (Abe and Zane 1990), making the individual appear more likable and acceptable in social interactions (Bond et al. 1982; Akimoto and Sanbonmatsu 1999). Thus, the Korean-Americans' style of social interaction might be a culturally driven social strategy of expressing deference to others, which is seen as important to maintaining social harmony (see also Bae and Brekke, in press).

It should also be noted that while the Korean-Americans reflected a culturally congruent profile in their living and social functioning, their vocational functioning was quite similar to that of the other ethnic groups in terms of the amount that they worked. The one notable difference was that they were far more likely to work in a family business than the other groups combined. Once again, their work functioning reflected a familial orientation.

As several cross-cultural researchers have proposed, the distinction between individualism and collectivism may also be useful in explaining these results. It has been suggested that sociocentric individuals with collectivistic cultural orientation tend to emphasize family integrity, harmonious relationships, and sociability, whereas egocentric individuals from individualistic cultures emphasize independence, self-reliance, and competitiveness (Triandis 1988, 1990; Kagitcibasi and Berry 1989; Triandis et al. 1993; Yoon and Choi 1994). Thus, it can be hypothesized that individuals with a sociocentric orientation are more likely to exhibit behavioral characteristics that are family oriented, high in social skills, and harmonious. While the data from this study suggest that both African-Americans and Latinos had somewhat stronger collectivistic orientations than Caucasians (see also Brekke and Barrio 1997), the Korean-American sample was differentiated from these other groups by exhibiting closer contacts with family, stronger family involvement, significantly higher social competence, lower social friction, less social initiation, and greater social affiliation. Thus, the differences that tended to occur with only Korean-Americans imply that their collectivistic cultural orientation was stronger than that of the other two ethnic minority groups. Conversely, it is also possible that collectivism is expressed differently across ethnic minority groups. It is clear, however, that the Korean-Americans were expressing strong congruence with traditional Korean-American cultural style in their social and familial orientations.

This study also found that the Korean-American sample experienced lower levels of social satisfaction and general life satisfaction than the other three ethnic groups. In a previous study, we found that symptom levels were strongly related to SWL (Brekke et al. 1993); therefore, we examined the correlation between the BSI and SWL scores separately for each ethnic group to see if this association was stronger for the Korean-Americans and thus might account for the lower life satisfaction. This was not the case.

At this time, we do not know what factors account for Korean-Americans' lower satisfaction with life. One possible explanation may be related to methodological issues. Although particular attention was paid to minimizing translation bias by employing such techniques as back-translation and the committee approach, it is still possible that the findings from the SWL could be confounded with translation bias because it is not always easy to translate culturally shaped idiomatic items and abstract concepts from source language to target language (see Hurh and Kim 1988). In addition, the SWL measure may not be culturally sensitive to the Korean-American sample. Research has indicated that Asian-Americans tend to use more restrained modes of emotional expression (Tsui and Schultz 1985). Thus, the findings might reflect the Korean-American sample's differential amplitudes of affective expression rather than true difference (Hurh and Kim 1988). Another issue could be a culturally influenced response bias. In this regard, we have some confidence in the cross-cultural equivalency of the SWL measure because (1) the SWL items were examined for response bias and did not show any systematic response tendencies among the ethnic groups, and (2) a series of Pearson correlations between the SWL and several psychosocial variables showed that across all the ethnic groups, the SWL was significantly associated with self-esteem and symptomatology (the BSI) and was not significantly associated with days worked and number of close friends (data available upon request). Nonetheless, SWL findings may have been influenced by an unknown and/or unexamined cultural response bias.

Keeping these methodological issues in mind, we suggest the following explanation for the Korean-Americans' lower satisfaction with life. It is possible that the Korean-Americans who adhere to a traditional collectivistic orientation and who now live in a very individualistic Western country may experience stress in adapting to a new cultural milieu. Literature on Asian-Americans has documented that this cultural transition often increases the risk for psychological maladjustment (Lin et al. 1979; Sue and Zane 1985; Ying 1988; Abe and Zane 1990; Hurh and Kim 1990), which could disrupt their life satisfaction. Studies with nonclinical Asian-American community populations revealed that psychological problems reported by Korean-Americans, the most recent immigrants, were the greatest among major Asian-American groups and also greater than those of other ethnic groups (Kuo 1984; Kuo and Tsai 1986). The present study provides some evidence that the lower level of psychological well-being found among Korean-Americans could be generalizable to this clinical population in terms of their satisfaction with life. It should be noted, however, that this did not manifest itself in lower self-esteem for the Korean-Americans and did not have a pervasive effect on other psychosocial domains.

Overall, this study adds to a growing body of research suggesting that cultural factors are essential to our understanding of the nature, course, and treatment of schizophrenia. As biosocial models gain preeminence in the study of schizophrenia (Nicholson and Neufeld 1992; Yank et al. 1993; Olin and Mednick 1996), it is clear that culture needs to be a critical social environmental variable in these models.

The findings from the present study also have important clinical implications. One of the most important findings was that the lives of the Korean-American subjects strongly reflected their traditional culture. Given that a "fit" or "match" between service providers and the cultural beliefs and practices of service recipients can be an important factor for positive treatment outcome (Flaskerud 1986; Sue et al. 1991), it is important to incorporate cultural characteristics of the Korean-Americans into the intervention process. For example, interventions that are designed to foster family bonding and involve families in a collaborative effort may be more appropriate for Asian-Americans because of the interdependent nature of their family dynamics (Shon and Ja 1982; Sue and Morishima 1982). For this reason, Bae and Kung (2000) have proposed a culturally relevant family intervention model that may be employed for Asian-Americans with schizophrenia.

Second, social deficits are considered a core aspect of schizophrenia, and numerous interventions have been developed to address problems in social interaction (Mueser and Tarrier 1998). Given that the social functioning of Korean-Americans with schizophrenia was distinct from that of both majority culture members and other ethnic minorities in the United States, it is imperative that the cultural congruence of interventions to improve social functioning be assessed before they are applied to Korean-Americans or other Asian groups. Interventions that reinforce culturally incongruent levels of social assertiveness or social confrontation are likely to be rejected or even be noxious to certain groups (see Telles et al. 1995).

Third, Korean-Americans' lower level of life satisfaction requires clinical attention. While from this study we do not know the factors responsible for this low life satisfaction, clinicians should be aware of this and address it in treatment. Comprehensive psychosocial assessment should be directed to identifying individual stress factors that negatively affect the individuals' adjustment within the community.

This study also has implications for research in this area. First, this study provides a strong case for cultural relevance in the design and interpretation of cross-ethnic studies. For example, this study found that the majority of the Korean-Americans and Latinos lived with their families. From the Western perspective, this may be interpreted as negative dependency that hampers the individuals' independence and autonomy. However, it is not unusual for

people from collectivistic cultures to live with their parents even after they get married. Frequently, parents also live with their children until they die (Triandis 1988). Because of the interdependent nature of these families, separation might be against cultural values, whereas living with family might be a valuable experience for some cultural groups (Clare and Birchwood 1998). Similarly, the Korean-Americans' lower social initiative might also be interpreted as a sign of passivity and a target for clinical intervention from the Western point of view. For the Korean-American sample, however, it may actually be culturally desirable to express deference toward others. Interpretation of study findings should consider the cultural values and norms of the ethnic group.

Second, previous research has found that a collectivistic cultural orientation was common for the ethnic minority groups in the current study (Lefley 1990; Karno and Jenkins 1993; Brekke and Barrio 1997). However, we noted that the degree of collectivistic orientation varied across the groups. Future research needs to identify what mechanism is associated with the varying degrees of collectivistic orientation. Different acculturation rates may be an important mechanism responsible for the observed pattern. Previous studies also indicated that collectivistic individuals become more individualistic as they become acculturated (Marin and Triandis 1985). However, one study (Hurh and Kim 1984) with a Korean-American sample indicated that their strong ethnic attachment and traditional values were not affected by their length of residence in the United States or their acculturation rates. The present study cannot address this question because while the Korean-Americans were the most collectivistic, they were also the least acculturated group; therefore, acculturation was confounded with ethnicity in this design. Because of this, it is possible that some of the collectivistic qualities of the Korean-Americans could also be found among unacculturated Latinos, for example. Using a design that varies both collectivism and acculturation across ethnic groups would allow examination of the relationships between acculturation and cultural orientation.

Third, the Korean-Americans' strong traditional cultural orientation should not be generalized to other Asian-American groups. The present findings need to be replicated with other Asian-American groups because valuing collectivism over individualism is common to those groups as well. This would also provide an opportunity to understand how both the diversity and the homogeneity of the Asian-American population could be manifested.

Fourth, these findings suggest that assessments across multiple psychosocial domains are essential in cross-cultural research on schizophrenia. Differing results across distinct outcome domains would have been missed in this study if global measures of more broadly defined outcome constructs had been employed.

Before concluding, we need to address several limitations of this study. First, the study sample was not randomly selected, and therefore its representativeness cannot be assessed. However, we believe that our Korean-American sample has relevance to the Korean-American population in the United States because (1) the largest population of Korean-Americans lives in the Los Angeles area, (2) we selected our Korean-American sample from an agency that is located in the area of Los Angeles with the highest concentration of Korean-Americans, and (3) the agency is the largest Korean-American-serving mental health clinic in the Los Angeles area. Second, the sample was engaged in treatment; therefore, it cannot be assumed that these results are generalizable to individuals with schizophrenia who are not in treatment. Third, because the Latino sample was small, replication is needed with a larger Latino sample. Fourth, three of the ethnic categories used in this study (Euro-American, African-American, and Latino) are broad generalizations and do not account for the known heterogeneity within each of the populations. However, each term is useful to refer collectively to a population provided that its diversity is recognized. Fifth, previous research indicated that structural variables such as age at immigration and length of residence in the United States may have some significant influence on immigrants' mental health. However, we were not able to address this issue in the study because the data from non-Korean samples did not include enough information on those structural variables. Future studies need to control these structural variables in the analyses to make more accurate cross-cultural comparisons. Finally, the sociocultural explanations presented in this article remain speculative because we did not directly measure individualism/collectivism, the acculturation measure was derived from existing data, and we did not assess acculturative stress. Thus, these explanations should be seen as heuristic until they are tested in future research.

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