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ORIGINAL ARTICLE

# A Sociodemographic Profile of Asian Americans Served in Community Mental Health Centers for a Diagnosis of Schizophrenia Spectrum Disorder

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**Abstract**
Little is known about Asian Americans treated for serious psychiatric disorders in the public mental health system. We characterized 75 Asian Americans seen at community mental health centers for a diagnosis of schizophrenia spectrum disorder to anticipate likely clients and gain insights into their service needs. Participants completed in-person interviews and self-report questionnaires on their demographic and social characteristics. The ethnically diverse sample featured mostly foreign-born individuals with long-standing schizophrenia. Findings highlighted participants' differential experience of social adversities and stressful events, but also revealed salient cultural resources that shielded some from the social sequelae of schizophrenia. Recovery-oriented mental health programs staffed by culturally and linguistically compatible providers remain key to engaging this marginalized population in service. Findings also uphold a holistic management of schizophrenia spectrum disorder among racial and ethnic minorities, taking into account the complex social needs of afflicted individuals.

**Keywords** Asian Americans · Schizophrenia · Sociodemographic profile · Community mental health centers

The Asian population will continue to be the fastest-growing racial and ethnic group in the United States (U.S. Census Bureau 2016). This population is projected to increase by 143% in the coming decades, from 20 million in 2014 to 49 million by 2060 (Colby and Ortman 2015). Accordingly, Asian Americans' demand for mental health services will rise. Individuals with schizophrenia and other serious psychiatric disorders are expected to constitute a considerable proportion of mental health service users in the Asian American community (Barreto and Segal 2005; Durvasula and Sue 1996), but little is known about this growing group. A basic demographic characterization, which can provide clues to the existence of service needs in one of the most marginalized subgroups in the Asian community, is lacking.

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## Background

### Schizophrenia

Schizophrenia is a psychiatric condition characterized by hallucinations, delusions, diminution in emotions and behaviors, and deficits in cognitive processes (National Institute of Mental Health 2009). Disorganization in thought processes and behavior are also evident in some affected individuals. During periods of acute exacerbation, individuals may lose touch with reality and manifest significant functional impairments, which can persist beyond episodes. On these bases, schizophrenia is considered among the most disabling and costly psychiatric disorders (McEvoy 2007; Charlson et al. 2018).

### Asian American Mental Health Users

Stigma has been found to hinder Asian Americans' use of mental health services such that treatment is typically sought

because of a significant deterioration in mental state (Kim and Omizo 2003; Okazaki 2000). Indeed, Asian Americans who use public mental health services tend to be individuals with the most serious psychiatric disorders, notably schizophrenia (Barreto and Segal 2005; Kinzie and Tseng 1978; Sue et al. 1991). In one of the earliest studies on mental health service use among Asian Americans, Sue et al. (1991) found that half of Asian American outpatients (50.3%) served in the Los Angeles County mental health system were treated for psychotic disorders such as schizophrenia. An equal proportion of Blacks (50.2%) were treated for similar diagnoses. In comparison, 42.8% of Whites and 35.5% of Mexican Americans were treated for psychotic disorders. Similar patterns of use were found in a later study using data gathered from the California Department of Mental Health (Barreto and Segal 2005). A higher percentage of Asians (51%) were seen for a diagnosis of schizophrenia and other serious mental illness compared to Whites (40.3%), Blacks (38.9%), and Latinos (36.9%).

## Study Aims

This study characterized Asian Americans receiving services in urban community mental health centers for a diagnosis of schizophrenia spectrum disorder. We assessed the distribution of selected demographic (race, English proficiency, marital status, educational level, employment status, and immigration histories) and social (religious affiliation, living arrangement, family contact, and stressors) characteristics of these individuals. Wherever possible, descriptive statistics were compared to those of the general Asian American adult population and community samples of individuals with schizophrenia to reveal added disadvantages or resources among Asian Americans with schizophrenia spectrum disorder.

We assessed characteristics relevant to mental health providers for understanding and intervening with this population. Demographic characteristics were considered because data can inform culturally compatible program development and service delivery via an appreciation of likely clients. Social characteristics were examined because they can not only reveal aspects of the social environment that may compromise treatment outcomes, but also highlight cultural resources for buffering against the aftereffects of schizophrenia. Descriptive data, therefore, may reveal salient targets for psychosocial interventions. Relatedly, comparing the study sample to the general Asian American population or other community psychiatric samples on examined characteristics can give clues about the types and extent of needs among Asian Americans with schizophrenia spectrum disorder, which have not been systematically examined or documented. This paper is not intended to be a comprehensive report on the examined characteristics, but rather offers a portrait of a group that has hitherto been understudied. As such, results of theory-informed regression analyses that identified factors associated with specific characteristics are not reported here. These findings and others related to the sample's clinical characteristics and treatment responsiveness will be presented elsewhere. Although exploratory, this study represents an initial but important effort to gain insights into a growing group of mental health service users.

## Methods

### Study Design

This study used data gathered cross-sectionally from 75 Asian Americans receiving services in urban community mental health centers for a diagnosis of schizophrenia spectrum disorder.

#### Settings

Four community mental health agencies operated or contracted by the Los Angeles County Department of Mental Health and two board-and-care facilities in Los Angeles formed the recruitment sites. These centers were identified for study involvement because they either served a large number of Asian clients or were determined by the county as ethnicity-specific mental health agencies.

#### Participants

Eligible clients were aged 18 or older; received a chart diagnosis of schizophrenia spectrum disorder (schizophrenia, schizoaffective disorder, or schizophreniform disorder); self-identified as a person of Asian or Asian American descent; and could speak and read English or an Asian language (Chinese, Cantonese, Vietnamese, and Khmer); and received services at one of the participating sites during the recruitment period between February 2016 and February 2017. Clients under conservatorship or receiving acute inpatient services or step-down mental health services at locked facilities during the recruitment period were excluded because of concern about their decisional capacity for research.

#### Recruitment

Participants were recruited using purposive sampling method from participating mental health centers where they received services. Mental health providers served as the first line of outreach by identifying clients who met the study inclusion criteria and then introducing the study to these prospective participants. Clients interested in participating

were referred to a member of the research team, who provided further information on the study. Feedback from mental health providers, coupled with the research team's experiences, suggested that this approach of proactive interpersonal contact with prospective participants was necessary for involving Asian Americans with serious psychiatric disorders in research. Prior to data collection, prospective participants were evaluated for their comprehension of the research protocol using the University of California, San Diego Brief Assessment of Capacity to Consent (Jeste et al. 2007). Those assessed to have decisional capacity for research were enrolled after giving written informed consent for participation.

We expected considerable challenges recruiting Asian Americans diagnosed with schizophrenia spectrum disorder for research participation. Barriers to involving this population for research participation are complex, often associated with being a member of a highly heterogeneous racial and ethnic minority group and having a serious psychiatric condition. Importantly, these barriers operated across all systems, at the macro (community mental health center), mediator (gatekeepers and research team), and micro (participant and interviewer) levels (Levkoff et al. 2000), collectively impinging on enrolment of participants. After consulting with the community mental health centers that served as recruitment sites, we strived to enroll about 100 participants during a 12-month recruitment period. In total, 93 Asian American clients were referred from the six participating centers. Figure 1 displays the reasons for nonparticipation among the 18 clients not enrolled. All 75 clients who were enrolled in the study completed the research interview. No data were gathered from individuals who met the study inclusion criteria but declined to participate.

### Study Procedure

Participants completed semi-structured interviews and self-report questionnaires, hereafter collectively referred to as research interview, which took on average 2 h. Participants received monetary compensation for their time. Interview scripts and questionnaires were translated into Chinese (simplified and traditional), Vietnamese, and Khmer to meet the language preferences of clients served at the participating centers. Undertaken by vendors approved by the University, translations were completed using the forward–backward translation method, and then reviewed by bilingual interviewers to ensure content validity (Brislin 1980). Forward translation was completed independently from backward translation. All questions and response choices from self-report questionnaires were read to participants. Participants completed the research interview at the community mental health center where they were receiving services or at their homes. One in four participants (25.00%) completed the research interview in an Asian language with the help of bilingual interviewers, who were master's-level students in social work, marriage and family therapy, or occupational therapy. This study protocol was approved by the university's institutional review board and the county's human subjects research committee.

## Measures

### Demographic and Social Variables

Participants' age, gender, race, marital status, primary language, English proficiency, educational level, employment status, living arrangement, frequency of family contact, and immigration histories (nativity status, country of birth, age at time of immigration, and generational status) were gathered using semi-structured interviews. Generational status featured six categories (Rumbaut 2004; Takeuchi et al. 2007): 1.00 generation (foreign-born individuals who arrived in the United States at age 18 or older), 1.25 generation (foreign-born individuals who arrived in the country between the ages of 13 and 17), 1.50 generation (foreign-born individuals who arrived between the ages of 6 and 12), 1.75 generation (foreign-born individuals who arrived before the age of 6), 2.00 generation (U.S.-born individuals with foreign-born parents), and 3.00 generation (U.S.-born individuals with U.S.-born parents). Participants' religious involvement was measured with the Duke University Religion Index (Koenig and Büssing 2010).

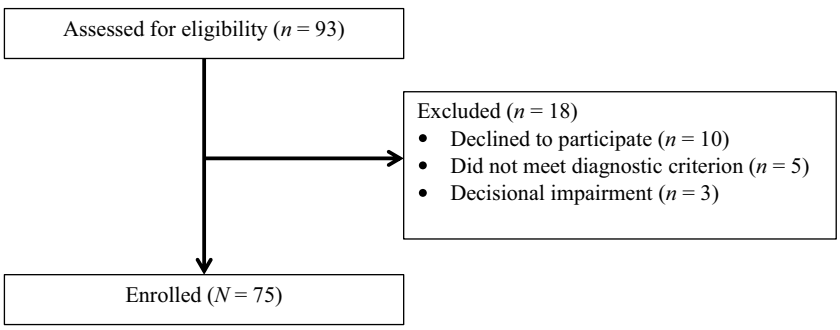


**Fig. 1** Recruitment flow diagram

### Stress Variables

Assessment of participants' stressors was retrospective and performed using self-report questionnaires. To minimize recall bias, evaluation of recent exposure was limited to the previous 6 months. Acculturative stress was measured with the Mexican American Prevalence and Services Survey (Vega et al. 1998). Foreign-born participants were asked whether they encountered any of the assessed experiences during the last 6 months. Response options were *no* (0) and *yes* (1). This survey was used in the National Latino and Asian American Study for a similar purpose (Alegría et al. 2004). Trauma exposure was assessed with a questionnaire developed by Turner and Lloyd (1995). Participants were asked whether they experienced any of the identified traumatic events after the age of 18 years and during the last 6 months. Life events were assessed using the Life Event List (Cohen et al. 1993). Participants were asked whether they encountered a change during the last 6 months in their living situation, relationships, health, employment, finances, and safety. Each item had a two-category response option: *no* (0) or *yes* (1). For every event experienced, participants further indicated whether the change was positive or negative. We reported only negative life events. Chronic strain encountered during the last 6 months in the domains of finances, work, marriage and relationships, family, social life, residence, and health was measured with an inventory developed by Wheaton (1994). Response options for each item ranged from *not true* (1) to *very true* (3). Due to the study's smaller sample size, each of the items was recoded by grouping responses of *somewhat true* (2) and *very true* (3) to form fewer but larger groups.

### Psychiatric Information

Participants' psychiatric diagnosis, clinical history, and use of mental health services were gathered. Psychiatric diagnosis was ascertained using medical records. Clinical history (age at onset of illness, length of illness) and mental health service use (duration of service use, medication adherence) was determined by participants' self-report, then verified with the referring mental health provider. Assessment of medication adherence was based on days of antipsychotic medication use during the previous 180 days, and then recoded as continuous, regular, low, or nonuse in accordance with the criterion proposed by Kane et al. (2003).

## Statistical Analysis

Univariable analyses were conducted to derive descriptive statistics. Means and standard deviations were computed for quantitative variables, frequency distributions for categorical variables. Distributions of certain social characteristics were stratified. Chi square tests, with correction of unequal variances whenever necessary, or Fisher's exact tests were performed to examine relationship between two categorical variables, and two independent *t*-tests or one-way analyses of variance were performed to compare means for two or more independent groups, respectively. Preselect two-tailed directional tests and statistical significance was determined at $\alpha = 0.05$. Analyses were performed with Stata 13.0.

# Results

## Psychiatric Profile

The study sample featured participants diagnosed with schizophrenia (68.00%) and schizoaffective disorder (32.00%). The average age at onset of illness was 22.62 years ($SD = 8.38$; range = 11–51; mode = 20.00), and the average length of illness was 14.41 years ($SD = 12.32$; range = 0–51). The majority of participants (90.54%) had lived with the disorder for at least 5 years. The average duration of mental health service use was 10.29 years ($SD = 9.28$; range = 0.08–30.00), and more than half of participants (61.54%) had used services for at least 5 years. Most participants (90.67%) reported being on continuous or regular use of antipsychotic medication during the previous 6 months.

## Demographic Characteristics

Table 1 displays the sample's demographic characteristics. Demographic estimates of the general Asian American population are also displayed. The study sample was ethnically diverse with an even split in gender. Participants' ages ranged from 19 to 66 years ($M = 43.03$; $SD = 12.61$). Of note, 31.51% of participants completed a high school education (including equivalency), 39.73% had some college education, and 15.07% obtained a bachelor's degree or higher. This is compared to 15.00, 18.10, and 53.80%, respectively, of the Asian American adult population (U.S. Census Bureau 2017). Most participants were not in labor force at study entry (74.67%) and never married (74.67%), compared to 35.10% and 31.00%, respectively of the Asian American adult population (U.S. Census Bureau 2017). Relatedly, 21.33% of participants reported being divorced or separated, compared to 5.1% of the general Asian American population (U.S. Census Bureau 2017). Although 63.16% of ever-married participants were parents, only 30.77% of these individuals had contact with their children. Less than half of participants (44.00%) reported English to be their primary language, but 88.00% rated their English proficiency as at least fair and 76.00% completed the research interview in English. Among participants whose primary language was not English ($n = 42$), more than half (57.14%)

**Table 1** Demographic profile of study sample ($N=75$)

| Variable | Sample *n* (%) | General Asian American population[a] (%) |
|---|---|---|
| Detailed group[b] | | |
| Chinese | 40 (53.33) | |
| Korean | 10 (13.33) | |
| Cambodian | 8 (10.67) | |
| Japanese | 7 (9.33) | |
| Vietnamese | 5 (6.67) | |
| Filipino | 4 (5.33) | |
| Thai | 1 (1.33) | |
| Age, *M* (*SD*) | 43.03 (12.61) | |
| Male | 42 (56.00) | 47.30 |
| Nonnative English speaker | 41 (54.67) | |
| English proficiency | | |
| Excellent or good | 48 (64.00) | |
| Fair | 18 (24.00) | |
| Poor or does not speak English | 9 (12.00) | |
| Completed interview in English | 57 (76.00) | |
| Marital status | | |
| Never married | 56 (74.67) | 31.00 |
| Married | 3 (4.00) | 58.20 |
| Previously married[c] | 16 (21.33) | 10.80 |
| Educational attainment | | |
| Less than high school | 10 (13.70) | 13.10 |
| High school graduate | 18 (31.51) | 15.00 |
| Some college education[d] | 29 (39.73) | 18.10 |
| Bachelor's degree or higher | 11 (15.07) | 53.80 |
| Employment status | | |
| Some employment or supported employment | 12 (13.34) | 64.90 |
| Not working or not seeking employment | 56 (74.67) | 35.1[e] |
| Student | 7 (9.33) | |
| Homemaker or caregiver | 2 (2.67) | |
| Foreign born | 53 (70.67) | 66.30 |
| Generational status | | |
| 1.00 | 20 (26.67) | 76.9[f] |
| 1.25 | 10 (13.33) | |
| 1.50 | 11 (14.67) | |
| 1.75 | 12 (16.00) | |
| 2.00 and above | 22 (29.33) | 23.1[f] |

[a]Estimates derived from the 2017 American Community Survey 1-year Estimates of the Asian alone population

[b]The majority of participants identified with only one detailed Asian group, such as Chinese or Vietnamese, with only one participant reporting more than one race (Vietnamese and White)

[c]Composed of participants who were separated, divorced, and widowed

[d]Includes trade school, community college, and college

[e]General Asian American adult population not participating in labor force

[f]Derived from the National Latino and Asian American Study (Takeuchi et al. 2007)

reported speaking English less than very well. By comparison, 43.80% of the general Asian American population who spoke a language other than English at home reported speaking English less than very well (U.S. Census Bureau 2017).

### Immigrant Histories

Seven in 10 participants were foreign born (70.67%), comparable to the proportion of the Asian American adult population (77.72%; U.S. Census Bureau 2017). Among foreign-born participants, 37.74% were 1.00-generation immigrants, and the remaining participants were 1.25-generation (18.87%), 1.50-generation (20.75%), or 1.75-generation (22.64%) immigrants (see Table 1). This distribution of immigrant generations corresponds to those of Asian Americans enrolled in the National Latino and Asian American Study, a survey of nationally representative samples of Latinos and Asians in the United States (Takeuchi et al. 2007). The average length of stay in the United States among foreign-born participants was 30.49 years ($SD = 9.73$, range = 6–59). Although the majority of foreign-born participants (83.02%) reported their English proficiency to be at least fair, fewer (67.92%) completed the research interview in English. Of note, only 43.33% of 1.00- and 1.25-generation immigrants completed the research interview in English.

## Social Characteristics

### Religious Identity and Participation

Seven in ten participants (72.00%) had a religious identity (see Table 2). This proportion is similar to those in the general population (79.1%; Newport 2016) and that of the Asian American population (74.0%; Pew Research Center 2013). Additionally, the religious composition of participants follows that of the general Asian American population in that Christians formed the plurality group (45.33%), followed by the religiously unaffiliated (26.00%), Buddhist (18.67%), and those with either other or more than one religion (8.00%; Pew Research Center 2013).

Fewer participants partook in religious activities (Table 2). About half of participants (56.00%) attended public religious meetings during the last year. Of note, only one third of affiliated participants (33.33%) attended a formal religious meeting (e.g., at a church or temple) at least once during the last 12 months. A similar pattern of lower levels of religious participation compared to religious identity emerged for time spent in private religious activities. Half of the sample (52.00%) engaged in prayer, meditation, or scripture study during the last 12 months, with two thirds of affiliated participants (66.67%) doing so regularly (i.e., at least a few times a month to daily).

**Table 2** Social characteristics of study sample ($N = 75$)

| Variable | Sample | General Asian American population[a] |
|---|---|---|
| | *n* (%) | (%) |
| Religious affiliation | | |
| Affiliated | 54 (72.00) | |
| Christianity | 34 (45.33) | 42 |
| Buddhism | 14 (18.67) | 14 |
| Other affiliation[b] | 6 (8.00) | 17 |
| No affiliation | 21 (28.00) | 26 |
| Religious participation | | |
| Public religious activities | | |
| Never | 33 (44.00) | 33 |
| A few times a year or less | 23 (30.66) | 35 |
| At least a few times a month | 19 (25.34) | 32 |
| Private religious activities | | |
| Seldom or never | 36 (48.00) | 35 |
| A few times a month | 7 (9.33) | 24 |
| Weekly | 13 (17.33) | |
| More than once a week | 19 (25.34) | 40 |
| Living situation | | |
| With family | 42 (56.00) | |
| Parent(s) and sibling(s) | 13 (30.95) | |
| Parent(s) only | 21 (50.00) | |
| Sibling(s) only | 7 (16.67) | |
| Others | 1 (2.38) | |
| Board-and-care facility | 26 (34.67) | |
| Independent | 7 (9.33) | |
| Family contact | | |
| No contact | 7 (9.46) | |
| Occasional contact | 10 (13.51) | |
| Regular contact | 57 (77.03) | |

[a]Estimates were derived from the 2012 Asian American Survey (Pew Research Center 2013)

[b]Comprised of multifaith, Judaism, Latter Day Saints, and Taoism

Religious participation was lower in this sample than other psychiatric samples (Mohr et al. 2012; Tepper et al. 2001). In a study of mostly White and Black outpatients with schizophrenia (Mohr et al. 2012), 82% of participants performed private religious activities regularly (i.e., every day or every week), compared to 42.67% of participants in this study. Participants also displayed lower levels of religious participation than the general Asian American adult population (Pew Research Center 2013). For example, close to half of participants (48.00%) seldom or never engaged in private religious activities during the last 12 months compared to 35% of the general Asian American population (Table 2).

### Living Arrangement

Participants had varied living arrangements (Table 2). About half (56.00%) were living with family members, one third (34.67%) were residing in board-and-care facilities, and the rest (9.33%) were living independently. The majority of participants living at home resided in a household that included a parent (81.39%). Living with parents was more common among participants than other samples featuring mostly non-Asians (excluding Latinos) with schizophrenia, but independent living was less common (Stueve et al. 1997; Tsai et al. 2011). Among individuals enrolled in the Clinical Antipsychotic Trials of Intervention Effectiveness study (Lieberman et al. 2005)—the largest clinical trial to date on therapies for schizophrenia featuring mostly Whites and Blacks (96.1%) with an age distribution comparable to those in the present study sample—15.6% were living with parents and 18.0% were living independently (Tsai et al. 2011).

Participants' living arrangement differed by parents' availability as caregivers. Parents' availability as caregivers was determined by participants' responses to items on their parents' health and estrangement from family taken from the questionnaires that assessed traumatic events and chronic strains. Almost twice as many participants living with family (85.17%) reported that both parents were healthy and available as caregivers, compared to participants living independently or in supervised settings (48.48%). Relatedly, half of participants (51.52%) living independently or in board-and-care facilities, compared to 14.29% of those living at home, reported either having lost both parents, being estranged from the surviving parent, or having a parent with disability, $\chi^2(1, 75) = 12.05$, $p < 0.01$.

### Family Contact

Most participants (90.54%) had contact with family members, even those who were not residing with family members. Close to 8 in 10 participants (78.79%) living independently or in supervised settings had contact with a family member, and about half (46.88%) had at least monthly contact. Because of the association between participants' living arrangement and parents' availability as caregiver, we examined whether the latter was also associated with family contact among participants who were not living at home. Among participants living independently or in supervised settings, 93.33% of those with at least one parent capable of caregiving had contact with family members, compared to 64.70% of their counterparts with unavailable parents, $p = 0.09$.

### Stressors

Tables 3, 4, and 5 detail the stressful events and social circumstances encountered by participants due to their status as immigrants or lived experiences with a serious psychiatric disorder.

*Acculturative Stress* About half of foreign-born participants (52.83%) experienced acculturative stress during the past 6 months, with an average of 0.98 ($SD = 1.09$; range = 0–4) stressors. A plurality of foreign-born participants found it hard interacting with others because of difficulties with the English language (42.50%). Another common stressor, reported by 28.12% of participants, concerned finding work they wanted because of their Asian descent. Other stressors were reported comparatively infrequently (see Table 3).

**Table 3** Acculturative stressors of immigrant participants

| Variable | Sample ($n = 54$) | Generational status | | | $p^a$ |
|---|---|---|---|---|---|
| | | 1.00 ($n = 20$) | 1.25 ($n = 10$) | 1.50- and 1.75 ($n = 24$) | |
| Found it hard interacting with others because of difficulties with English | 17 (42.50) | 11 (57.89) | 4 (40.00) | 2 (8.33) | 0.00 |
| Had difficulty finding work because of Asian descent | 9 (28.12) | 5 (38.46) | 3 (37.50) | 1 (4.17) | 0.01 |
| Limited contact with family and friends | 8 (20.00) | 6 (31.58) | 2 (20.00) | 0 (0.00) | 0.01 |
| Treated badly because found to have lower English fluency | 8 (20.00) | 5 (26.32) | 1 (10.00) | 2 (8.33) | 0.29 |
| Felt less respected in the United States | 7 (17.50) | 4 (21.05) | 2 (20.00) | 1 (4.17) | 0.76 |
| Questioned about legal status | 2 (5.00) | 0 (0.00) | 1 (10.00) | 1 (9.09) | 0.47 |
| Felt guilty for leaving family or friends in country of origin | 1 (2.50) | 1 (5.26) | 0 (0.00) | 0 (0.00) | 0.56 |
| Concerned about deportation when visiting social or government agencies | 0 (0.00) | 0 (0.00) | 0 (0.00) | 0 (0.00) | |
| Avoided seeking health services due to fear of immigration officials | 0 (0.00) | 0 (0.00) | 0 (0.00) | 0 (0.00) | |

Values represent *n* (%). Column sample size may not be commensurate with actual percentage due to missing responses

[a]Fisher's exact test was used to determine if groups differed at statistically significant levels

**Table 4** Lifetime prevalence of major traumatic events

| Variable | *n* (%) |
|---|---|
| Lost a parent(s) | 34 (45.33) |
| Ever been arrested | 32 (43.84) |
| Ever been assaulted | 25 (38.46) |
| Ever had a serious accident, injury, or illness that was life threatening | 26 (36.11) |
| Ever been divorced or ended a relationship while still in love | 24 (32.88) |
| Lost a spouse, child, or other loved ones | 20 (27.78) |
| Witnessed something violent happen to someone | 20 (27.78) |
| Ever experience a major natural disaster | 19 (26.39) |
| A close family member was addicted to alcohol or drugs | 18 (24.66) |
| Ever been sexually abused or assaulted | 15 (20.55) |
| Ever been assaulted with a weapon | 12 (18.46) |
| Ever discovered a spouse or partner was unfaithful | 12 (16.44) |
| Ever been in a war or lived near a war zone | 10 (13.70) |
| Ever been physically abused by a partner or spouse | 6 (8.22) |
| A child had a near-fatal accident or life-threatening illness | 2 (2.74) |

Column sample size may not be commensurate with actual percentage due to missing responses

Excludes traumatic events that occurred in childhood (i.e., before the age of 18 years)

**Table 5** Prevalence of chronic stressors

| Variable | *n* (%) |
|---|---|
| Difficulty finding someone compatible | 40 (54.79) |
| Long-term health problem | 40 (54.05) |
| Alone too much | 40 (54.05) |
| Don't have enough money | 36 (48.65) |
| Don't have enough friends | 35 (47.30) |
| Wonder whether one will ever get married | 34 (46.58) |
| Taking on too many things at once | 32 (43.24) |
| Too much pressure to be like others | 32 (43.24) |
| Having to attend social events alone | 30 (40.54) |
| Too much is expected by others | 28 (37.84) |
| Want to live father away from family | 22 (29.73) |
| Long-term illness or disability in a family member | 22 (29.73) |
| Family lives too far away | 19 (25.68) |
| Wish to have children | 18 (24.32) |
| Long-term debt or loan | 14 (18.92) |
| Family member is in bad health and may die | 11 (14.86) |
| Substance use in a family member | 10 (13.51) |
| Caring for an aging parent almost daily | 7 (9.46) |

Column sample size may not be commensurate with actual percentage due to missing responses

Participants' varied immigration histories prompted us to examine the association between acculturative stress and generational status. Subgroup differences were found. First, levels of acculturative stress varied significantly by generation status, $F(3, 49) = 9.26$, $p < 0.001$. Levels were highest among first-generation immigrants ($M = 1.68$, $SD = 1.16$), intermediate among 1.25-generation immigrants ($M = 1.30$, $SD = 0.95$), and lowest among 1.50-generation immigrants ($M = 0.29$, $SD = 0.75$). Second, generational status was significantly linked to the type of stressor experienced (see Table 3). For example, more than half of 1.00-generation immigrants (57.89%) found interacting with others challenging because of limited English proficiency, compared to more than one third of 1.25-generation immigrants (40.00%) and less than one tenth of 1.50-generation or earlier immigrants (8.33%; $p < 0.01$). A similar percentage of 1.00-generation and 1.25-generation immigrants had difficulties finding the work they wanted because of their Asian descent—38.46% and 37.50%, respectively—compared to 4.17% of 1.50-generation or earlier immigrants ($p < 0.05$).

*Traumatic Event* Participants encountered an average of 6.03 trauma exposures ($SD = 3.90$) as adults. Whereas more than half of participants (66.67%) experienced at least one traumatic event in their adulthood, a smaller percentage (8.33%) reported an exposure during the last 6 months. Table 4 displays the lifetime prevalence of traumatic events in the study sample. We presented findings on a subset of traumatic events—namely, victimization and arrest—because they have been identified as common social sequelae of schizophrenia. Furthermore, certain traumatic events (e.g., parental loss) are inevitable, and others occurred comparatively infrequently.

About half of participants (46.97%) experienced physical assault by an intimate partner, strangers, or acquaintances. This proportion corresponds to those found in other community samples of persons with serious mental illness, which ranged from 38% to 47.62% (Brekke et al. 2001; Chuang et al. 1987). The proportion of participants who experienced recent victimization was lower than the rate found in other

community psychiatric samples: 2.67% of participants in this study reported having been victimized during the last 6 months, compared to the 6-month and 4-month rates of 25.6% and 8.2%, respectively, in previous samples composed mostly of Whites and Blacks with serious mental illness (Hiday et al. 1999; White et al. 2006).

Four in 10 participants (43.84%) had been arrested in their lifetime, but only 2.67% were arrested during the last 6 months. The lifetime arrest rate in this study sample is comparable to, if not lower than, those in other community samples of adults with schizophrenia. These earlier studies found rates between 49 and 71% in samples composed mostly of White and Black men with schizophrenia (Brekke et al. 2001; Lafayette et al. 2003; White et al. 2006).

*Life Events* Half of participants (50.00%) did not experience any of the examined life events during the previous 6 months. Among participants who did, the majority (89.19%) reported the change to be negative. Participants who encountered a recent negative life event reported an average of 1.09 events ($SD = 0.39$; range = 1–3). The most common life event concerned the behavior of a family member, followed by involuntary unemployment. Another common recent life event, reported by 31.25% of participants, related to unemployment. The occurrence of other life events was infrequent (less than 10%). Problematic familial relationship was associated with living arrangement. Almost 5 times as many participants living with family (30.95%) reported that the behavior of a family member had been problematic in the previous 6 months, as compared to participants living independently or in supervised settings (6.06%), $p < 0.01$.

*Chronic Strains* The majority of participants (97.30%) reported experiencing at least one chronic life event during the last 6 months. Rates of examined stressors are listed in Table 5. The commonly reported chronic stressors were difficulties finding a romantic partner (54.79%), having a long-term health problem that prevented participants from doing the things they like (54.05%), being alone too much (54.05%), not having enough money to meet daily needs (48.65%), not having enough friends (47.30%), and having concerns about whether they will ever get married (46.58%).

## Discussion

Serving the growing group of Asian American mental health users with the most serious psychiatric conditions necessitates an anticipation of likely clients and an understanding of their unique needs to guide program development and service delivery. We strived to contribute to this effort by undertaking a cross-sectional study to characterize 75 Asian Americans served in urban community mental health centers for a diagnosis of schizophrenia spectrum disorder. This sample of mental health service users was ethnically diverse. Participants were mostly first-generation immigrants (1.00- through 1.75-generation) and individuals with long-standing schizophrenia. In general, participants evidenced differential exposure to social adversities and stressful events. Despite their vulnerability to multiple stressors, findings revealed salient cultural resources that may have shielded some from the social sequelae of schizophrenia.

The outlined demographic characteristics revealed that participants were more disadvantaged than the general Asian American population, as evidenced by lower overall levels of educational attainment, labor force participation, marriage, and English proficiency. These disadvantages, with the exception of language proficiency, can be attributed to impairments in functioning associated with schizophrenia. Consistent with earlier findings on the prevalence of religious involvement among individuals with serious mental illness and the general Asian American population (Mohr et al. 2012; Pew Research Center 2013; Tepper et al. 2001), the majority of participants had a religious affiliation. Religious participation, however, was lower in this sample compared to others composed mostly of non-Asians (excluding Latinos) with serious mental illness (Mohr et al. 2012; Tepper et al. 2001) and the general Asian American population (Pew Research Center 2013). Moreover, affiliated participants who are presumed to be more engaged in religious activities also evidenced lower levels than other psychiatric samples. These divergent findings suggest that participants were less likely to rely on religion as a coping resource.

Familial support was evident in the lives of most participants. More than half of participants were living with family and the majority had contact with family members. Living with family was more common in this sample than other psychiatric samples composed mostly of individuals belonging to other racial and ethnic groups, excluding Latinos (Stueve et al. 1997; Tsai et al. 2011). Many participants with this living arrangement resided in a household that included a parent. Parents' inability to be involved in caregiving was associated with independent or supervised living among participants. The presence of an available parent was also associated with participants' contact with family members. These findings collectively suggest the centrality of Asian American parents as caregivers of individuals with serious mental illness. Indeed, studies have found that parents, rather than significant others or siblings, are more likely to be the primary caregivers of Asian Americans with schizophrenia (Kung 2003; Okazaki 2000).

Level of acculturative stress was lower in this sample than the general Asian American population. Research using data from the National Latino and Asian American Study found that 70.00% of Asian immigrants experienced acculturative stress in their lifetime, with an average of 2.01 ($SD = 1.87$) stressors (Lueck and Wilson 2010; Gong et al.

2011). The lower level may be partly due to the majority of participants living in residential ethnic enclaves. The racial and ethnic diversity of Los Angeles might have also helped buffer immigrants from the stress of assimilating to a different culture. More importantly, the discrepancy in findings may be explained by measurement differences between studies. Whereas the National Latino and Asian American Study measured lifetime experience of acculturative stress, we measured recent exposure.

Other findings that emerged concerned differential levels and types of acculturative stress by generational status. Our findings converge with those previous research has delineated, that foreign-born individuals who immigrated to the country as adults experienced not only greater challenges navigating and adapting to a new culture, but also different acculturative stressors compared to those who immigrated at a younger age (Cervantes et al. 2013; Lueck and Wilson 2010; Shin et al. 2017).

Concerning lifetime exposure to traumatic events, participants were as vulnerable as individuals belonging to other races and ethnicities (excluding Latinos) with similar diagnoses to experiences of arrest and victimization. Close to half of participants reported having been a victim of physical assault in adulthood. The proportion of participants who experienced physical assault is comparable to those in other community samples of persons with serious mental illness (Brekke et al. 2001; Chuang et al. 1987). The lower rate of recent victimization in this sample may be attributed to the lower occurrence of important risk factors of victimization—namely, homelessness and substance use. Relatedly, the availability of family members, especially parents, as caregivers might have protected participants from homelessness.

Similarly, the finding that more than 4 in 10 participants had a history of arrest is consistent with earlier findings that individuals with schizophrenia evidenced higher arrest rates than community samples without a history of psychiatric conditions (e.g., Harry and Steadman 1989). However, the lifetime arrest rate was lower in this study sample than in other community samples of adults with schizophrenia. Because being male has been found to be a risk factor for arrest among individuals with serious mental illness (White et al. 2006), the higher arrest rates reported by previous studies may be due in part to the higher proportion of male participants in these studies, which ranged from 68% to 75% (Brekke et al. 2001; Lafayette et al. 2003; White et al. 2006), compared to 56% in the present study. Research also has found that people with serious psychiatric disorders were more likely to be arrested during periods of decompensated mental states, generally triggered by nonadherence to antipsychotic medications (Robertson et al. 1996) and homelessness (White et al. 2006). Accordingly, the low rate of arrest during the last 6 months in this study sample may be explained by participants' living situation in that all were housed and engaged in mental health treatment.

Half of participants did not encounter a life event in the previous 6 months. Among those with a recent negative life event, problematic behavior of a family member was the most common complaint. This finding highlights the polar influences of family, in that although living with family members shielded participants from many social sequelae of schizophrenia, this living arrangement increased the probability of conflict with family members for some. This stressor may be more salient among individuals with pronounced negative symptoms (Weisman et al. 1998).

Chronic stressors, which are of comparatively lower intensity than other stressful experiences, were reported at a considerably higher frequency than traumatic events or acute stressors of life events. The set of chronic life stressors experienced by the majority of participants appears to be attributed to the lack of or failed efforts to be engaged with the surrounding environment, which is counterintuitive given the widespread perception that stress among individuals with schizophrenia is generally triggered by the exposure to life events rather than the lack thereof. This may have partly contributed to individuals with schizophrenia not fully engaging in a productive life, fearing that any involvement may trigger a relapse of symptoms. Findings from this study suggest that withdrawing from surroundings has the potential to engender low-grade but chronic stress. Indeed, it appears that the minor events of daily life stemming from unemployment and social isolation were a related form of stressful experiences among participants.

## Limitations

The use of a nonprobability sampling method coupled with the small-scale investigation likely resulted in a study sample not representative of the population of Asian Americans with schizophrenia spectrum disorder. We did not enroll individuals who were not engaged in treatment and thus, participants were likely selectively healthier than nonparticipants. It is also conceivable that some nonparticipants were healthier than participants, especially those who were not receiving mental health services because of sustained periods of symptoms and functional stabilization. Although we have no way to determine whether the sample represents the target population well, the study's data provide some evidence demonstrating that the recruitment method yielded a diverse group of participants. The distribution of certain demographic characteristics (e.g., nativity, generational status, and religious affiliation) matched the variations found in the general Asian American population. Moreover, participants' clinical characteristics such as age at onset of illness and symptoms profile (not reported here)

reflected those common to individuals with schizophrenia. Notwithstanding the limitations associated with nonprobability sampling method and smaller sample size, this study may involve the largest and most ethnically diverse sample of Asian Americans with schizophrenia spectrum disorder enrolled in a nonclinical trial study. Nonetheless, findings may not represent the experiences of Asian Americans seen in traditional mental health centers or living in areas that are less racially and ethnically diverse. We can expect this group to experience higher levels of social adversity because of poorer mental health service engagement or the lack of ethnic enclaves to buffer against stressful experiences. Another limitation relates to the study's cross-sectional design, which precludes conclusions on direction of association. Some of the administered measures, notably the questionnaire that assessed traumatic events and chronic strains, lacked sample-specific content. Accordingly, the prevalence of stress experiences may be underestimated in this sample, leaving the nature of these experiences under investigated

## Conclusion and Service Implications

We profiled an understudied group in the Asian American community—individuals living with one of the most disabling psychiatric disorders—with the hope that findings can serve several purposes, notably to advocate for more holistic management of the disorder, inform the delivery of culturally responsive services, guide resource allocation priorities, and serve as a springboard for further investigation. Against this backdrop, we offer several recommendations. First, the availability of culturally relevant supported-employment programs for Asian Americans with schizophrenia spectrum disorder can increase this population's participation in the labor force, thereby decreasing the risk of lifelong socioeconomic disadvantages (Nuechterlein et al. 2008). Second, family psychoeducation could be extended to non-primary caregivers (e.g., siblings) given the finding that many participants were living with other family members besides living with their parents. By equipping family members with skills related to caregiving, family psychoeducation can not only alleviate existing problematic familial interactions—a commonly encountered life event among participants—and prevent new challenges from surfacing, but also develop a seamless support system for clients when parents can no longer play a caregiving role. Third, low-grade but chronic stressors should be an important target of psychosocial intervention. Opportunities for engagement in meaningful activities that allow clients to contribute to society, meet potential life partners, and connect socially have the potential to enhance their quality of life. Fourth, the availability of bilingual and bicultural mental health providers continues to be key to engaging Asian Americans with serious psychiatric conditions in treatment, notably foreign-born individuals who are more recent immigrants. Moreover, higher levels of acculturative stress among 1.00-generation immigrants compared to 1.50- and 1.75-generation immigrants suggests that acculturative stress should be a target of psychosocial interventions for foreign-born individuals who immigrated to the country as adults. Fifth, mental health administrators overseeing resource allocation priorities should anticipate a growing need for board-and-care facilities to accommodate the rising number of Asian Americans with serious psychiatric conditions expected to use mental health services. Last, a replication of findings with a different and larger sample of Asian Americans with schizophrenia is needed to arrive at an enhanced understanding of this population's needs. Further analyses to uncover and explain differences in characteristics across groups are warranted.

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