

Mental Health Service Use among Asian Americans Five to Six Years after Exposure to the World Trade Center Attack

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ABSTRACT This study uses World Trade Center Health Registry data, based on Andersen's health-care model, to investigate 2,557 Asians' mental health service use and associated factors 5–6 years after the World Trade Center attack, compared against 32,111 non-Hispanic white participants. We find that Asians had a lower proportion of service use (15.76 vs. 26.60 percent) than white people. A previous mental health diagnosis and perceived and evaluated mental health needs strongly predicted Asians' mental health service use, as did having routine medical checkups, being female, and being married or cohabiting. These factors, in addition to other socioeconomic predictors that were nonsignificant among Asians, were significant among white people, as well. Our findings suggest that service providers need to provide clear diagnoses to service users, explore mental health needs during medical checkups, and provide postdisaster mental health education and free treatment.

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BACKGROUND

A sizable number of Asian Americans were exposed to the September 11, 2001, World Trade Center attack because of the disaster's proximity to Chinatown and the employment of many South Asians in and around the site (Asian American Federation 2003). The influence of the attack on the mental health of this population was examined only recently (Kung, Liu, Goldman, et al. 2018; Kung, Liu, Huang, et al. 2018). However, no study has investigated this group's mental health service use in the context of the World Trade Center attack. Given evidence of Asian Americans' striking underutilization of mental health services, compared to all other racial groups (US Department of Health and Human Services 2001), and the economic cost and human suffering engendered by untreated mental health conditions (Insel 2008), this study aims to shed light on the prevalence of mental health service use among Asian Americans after the World Trade Center attack and the factors associated with service use. Past trauma studies of Asian Americans mainly highlight the effects of pre-migration war and refugee experiences, as well as postmigration violence (Hinton et al. 2010), on mental health. Data gathered after the World Trade Center attack provide a unique opportunity to examine the influence of a more recent massive trauma on Asian Americans and the specific factors associated with mental health service use following this trauma in this understudied population. Using World Trade Center Health Registry (hereafter referred to as the Registry) data—from the largest cohort related to the disaster, including over 70,000 participants directly exposed to the attack—we examine Asian Americans' mental health service use and the individual-level factors associated with such use, comparing findings against non-Hispanic whites as a reference group to identify factors that are particularly important for Asian American mental health service use.

DISPARITIES IN MENTAL HEALTH SERVICE USE

According to national epidemiological studies, individuals with mental health needs often delay seeking treatment, and many ultimately do not seek help. For example, the National Comorbidity Survey Replication finds that those with diagnosable mental disorders had a median delay of 7 years from illness onset to seeing a service provider, and only about 40 percent had treatment contact within 6 years of symptom onset (Wang, Berglund,

et al. 2005). Those with posttraumatic stress disorder (PTSD), a common diagnosis following a traumatic event, had a median treatment delay of 12 years (Wang, Berglund, et al. 2005). Given the widely publicized and acknowledged effect of the World Trade Center disaster and the many free services provided by governmental and nongovernmental organizations after the attack (e.g., Project Liberty and American Red Cross 9/11 Fund; Felton 2002; Kapucu 2007), one would expect high service use (Boscarino et al. 2005). In a study conducted 6 months after the World Trade Center attack among individuals who were directly exposed to the attack, 64 percent of those with psychological symptoms did not seek help, despite 70 percent indicating diminished functioning (Stuber et al. 2006). However, it is unknown whether service use might increase with the passage of time in the medium-term period, for example, 5–6 years after the attack.

According to the 2001 US Surgeon General's Report, Asians' mental health service utilization is the lowest among all racial/ethnic groups (US Department of Health and Human Services 2001). A review of studies conducted over the past decade indicates that this pattern has persisted (Sue et al. 2012). The more recent National Latino and Asian American Study finds that only 34 percent of Asians with a probable past-year mental disorder used professional services (Abe-Kim et al. 2007), compared to 41 percent of the general population (Wang, Lane, et al. 2005). The proportion that used specialty mental health services was even lower, at 28 percent among Asians versus 54 percent in the general population (Le Meyer et al. 2009). Underutilization of mental health services among Asian Americans may also be present in the context of the World Trade Center attack. Given the substantial effects of such trauma, studying mental health service use among Asian Americans can provide an opportunity to further our understanding of the specific facilitating and impeding factors that shape service use in this population, in order to inform outreach efforts in this community after future disasters.

CONCEPTUAL FRAMEWORK OF HEALTH SERVICE UTILIZATION

This study was informed by the widely cited behavioral model of health service use developed by Phillip Andersen and his colleagues, which identifies a range of individual and contextual factors associated with health-care service use (Andersen 1995; Phillips et al. 1998; Andersen, Davidson, and Baumeister 2014). An earlier version of the model (Andersen and

Newman 1973) categorized these components into predisposing factors (demographics, social structure, health beliefs, and existing conditions), enabling factors (e.g., income, health insurance, and community facilities), and need factors (perceived and evaluated need for services). More recent versions also consider the larger environmental context, which includes external factors, characteristics of the health-care delivery system, and provider-patient interaction (Andersen 1995; Phillips et al. 1998). Some factors may be particularly important drivers of mental health service use among Asians in New York City compared to others, due to socioeconomic, cultural, and immigration-related factors. In this article, we used Andersen's model as a framework for examining factors related to mental health service use among Asians in the context of the World Trade Center attack (see fig. 1). This study examines the individual-level predisposing, enabling, and need factors that may be important determinants of mental health service use among Asians exposed to the World Trade Center attack, using data that are available in the Registry. Although factors related to the larger environmental context may also be important drivers of service use, the current study focuses on individual-level predictors of service use because of the lack of data on contextual factors in the Registry. Given the paucity of available information on predictors of mental health service use among Asian Americans in the context of mass trauma, key individual-level predictors will help to build a foundation on which future studies may evaluate more macrolevel factors. Some factors in Andersen's model that may have a special influence on the Asian group are highlighted below.

Among the predisposing factors in Andersen's model (Andersen and Newman 1973)—apart from basic demographic factors, including age, gender, marital status, and education (Wang, Berglund, et al. 2005; Cho, Kim, and Velez-Ortiz 2014)—social integration may be particularly important for Asian Americans, and may potentially be a barrier to help seeking. While stronger social networks and greater social interaction could facilitate service use by providing informational and emotional support for seeking help (Nicdao, Hong, and Takeuchi 2008), they could also impede service use (Counte and Glandon 1991; Ghuman et al. 2014). The tendency in Asian culture to perceive psychological distress as a result of malingering bad thoughts, lack of will power, and character weakness (Suan and Tyler 1990; Narikiyo and Kameoka 1992) could exacerbate perceived stigma from these social networks and, subsequently, pose threats to self-esteem

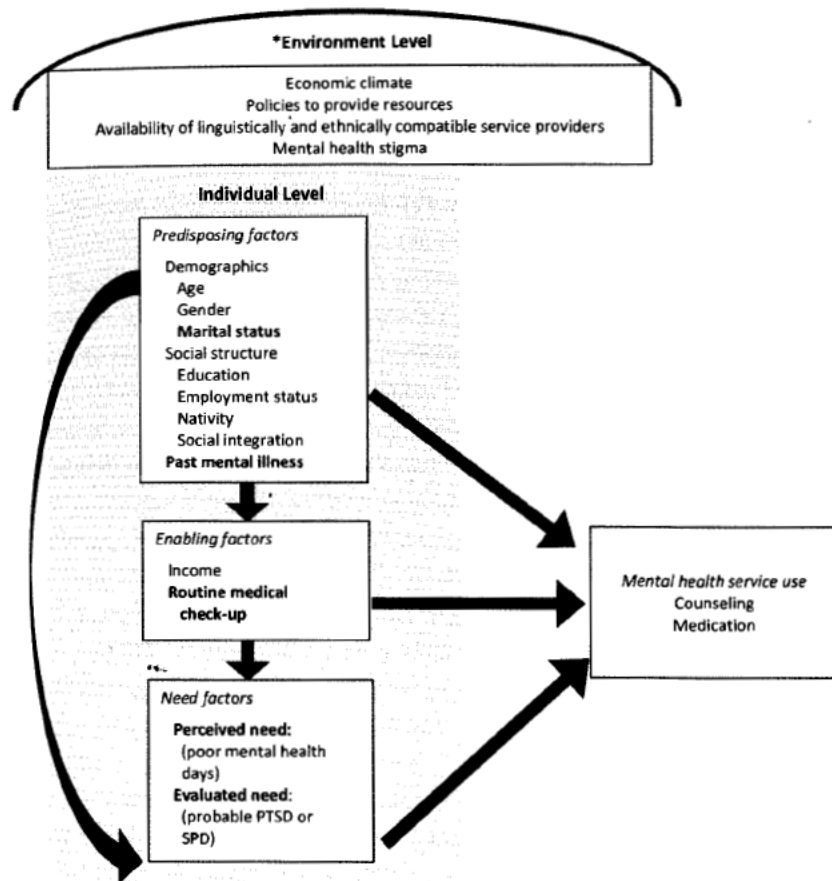


FIGURE 1. Conceptual framework for mental health service use (adapted from Andersen et al. 2014). Environment/contextual-level factors are not assessed in the current study; PTSD = posttraumatic stress disorder, SPD = serious psychological distress. Factors in bold were significantly associated with mental health service use among Asian Americans.

and self-efficacy in seeking help (Link et al. 2001; Gary 2005; Yang et al. 2007).

Psychiatric history may be another important predisposing factor that reflects an individual's vulnerability to psychological distress, his or her ability to recognize the need for service, and his or her knowledge of access (Mojtabai, Olfson, and Mechanic 2002; Brackbill et al. 2013). Individuals with a previous mental health diagnosis may be more likely to seek help again when the need arises. Previous experience with mental health treatment may be a particularly important predictor of future mental

health service use for Asians, given that mental health literacy and knowledge of access are generally low in this population (US Department of Health and Human Services 2001; Chen and Mak 2008); prior exposure to services may increase awareness of mental health needs and treatment resources.

The enabling factors in Andersen's model, particularly family income and aspects of health-care access, may also be particularly important predictors of mental health service use among Asians. The economic aftermath of the World Trade Center attack, which lasted for years in the Asian community in New York City, may have exacerbated distress among Asians. Studies of Chinatown's economy indicate that, years after the attack, small businesses that had been pillars of the economy (e.g., in manufacturing and food services) and primary sources of immigrants' employment continued to struggle (Asian American Federation 2005, 2008). The "enclave effect" often present in immigrant communities may have further reinforced their isolation and hampered the inflow of resources for their recovery (Chin 2005). We have previously reported, using the Registry data, that lower family income was associated with higher incidence of PTSD (Kung, Liu, Huang, et al. 2018) among Asian Americans; limited financial resources could also limit access to treatment when the need for services is even greater.

Regular contact with general medical practitioners may also facilitate mental health treatment (Boscarino et al. 2005; Stuber et al. 2006), although the type of mental health treatment sought may differ by race. Asians' greater tendency to conceive of emotional distress as related to bodily dysfunctions may increase their use of prescription medication for mental health problems (Kirmayer, Dao, and Smith 1998; Kung and Lu 2008). Consequently, individuals in this population may seek help from medical providers to relieve emotional distress (Chu, Hsieh, and Tokars 2011) rather than trying counseling or talk therapy, which may be less consistent with Asians' cultural values of self-effacement and reticence in verbalizing intense emotions (Lau and Takeuchi 2001; Leong and Lau 2001; Kung and Tseng 2006).

Finally, need factors such as perception of one's mental health and symptoms of psychological distress may also predict mental health service use among Asians (Cho et al. 2014). Both perceived and evaluated current mental health needs have been linked to increased mental health service use in different populations (Wang, Berglund, et al. 2005; Cho et al. 2014)

and may also be important determinants of service use among Asian Americans who have been exposed to mass trauma. The perceived need for mental health service may be lower among Asians because of their lack of knowledge or misconceptions about mental illness (US Department of Health and Human Services 2001; Chen and Mak 2008). However, when they recognize their need for mental health services, Asian Americans may be more likely to use them.

Despite evidence of greater underutilization of mental health services among Asians and their substantial exposure to the World Trade Center attack, few studies have examined this group's mental health service use and its associated factors following this large-scale disaster. We aim to investigate the prevalence of and specific factors related to formal mental health service use among adult Asian Americans who were directly exposed to the World Trade Center attack, using white people as a reference group. Our overall goal is to inform targeted outreach efforts to encourage mental health treatment and reduce treatment disparities following future disasters. Using Andersen's model of health-care service use as a framework, we examine the individual-level predisposing, enabling, and need factors that may facilitate or impede mental health service use. While the contextual-level factors in the model cannot be addressed in this study because of a lack of data, they nonetheless form the larger study context and provide a backdrop for the individual-level factors evaluated here.

METHOD

STUDY PARTICIPANTS

Our study is based on data from the World Trade Center Health Registry (the Registry), which was developed in 2002 to evaluate the long-term health effects of the World Trade Center attack and was funded by the US Federal Emergency Management Agency (Farfel et al. 2008). The Registry aimed to include all people who were directly exposed to the disaster due to close proximity to it in time and place, including those who suffered acute exposure to the nearby dust and debris cloud immediately after the towers' collapse and those who had chronic exposure to smoke in the vicinity. Registrants were recruited through outreach efforts to eligible groups; for example, people whose names were on lists from employers and governmental agencies and on residents' lists in lower Manhattan were contacted by telephone or letter. Individuals were also recruited through

widespread advertising campaigns through local and regional media via designated hotlines and websites. Participants included rescue and recovery workers, workers in the World Trade Center and nearby buildings, passersby, and residents in lower Manhattan. Data were collected through web-based, computer-assisted telephone interviews or in-person interviews. Full details of the recruitment and data collection processes have been described elsewhere (Brackbill et al. 2006; Farfel et al. 2008).

Baseline data were collected in 2003 and 2004, 2–3 years after the disaster, from a nonprobability sample of 71,437 participants age 18 years or over. Relative to estimates of the true eligible population of over 400,000 individuals, the enrollment rate was about 17 percent (Murphy et al. 2007). Nonresponse at wave 1 may be a concern, potentially leading to inflation of estimates related to health concerns (Murphy et al. 2005). Moreover, this potential bias due to nonresponse may be even higher for the group of participants who were further away from the World Trade Center site, which included residents near Chinatown, where a sizable number of Asian American participants were recruited (Murphy et al. 2005). Implications of sampling bias will be discussed further as part of study limitations.

Three additional waves of data were collected 5–6, 10–11, and 14–15 years after the attacks; only the first three waves of data are currently publicly available. This study is based on wave 2 data collected 5–6 years after the disaster, which was the first wave in which information on participants' mental health service use was collected. These data, collected during the medium-term period postattack, are the most relevant for our study aims for three reasons: (1) there is evidence of delayed onset of PTSD and other mental health conditions after a traumatic event in general (Wang, Berglund, et al. 2005; Bowler et al. 2010), (2) Asians often delay acknowledgment of mental health needs and thus seeking help (Leong and Lau 2001), and (3) information during this period is more useful for informing future targeted outreach efforts to increase mental health service use and prevent long-term psychopathology compared to more distal information from wave 3, which was collected over a decade after the attack.

The analytic sample of this study includes adults who participated in wave 2, who either also participated in wave 1 or were drop-ins at wave 2, and completed questions about mental health service use (Asians, $n = 2,557$; whites, $n = 32,111$). Those who had missing information about mental health service use at wave 2, those who dropped out of the study between waves 1 and 2, and those who used proxy interviews at wave 1

(indicating they were deceased) were excluded from the sample. Asians ($n = 2,346$, 47.85 percent of the baseline Asian sample) were more likely than whites ($n = 11,642$, 26.60 percent of the baseline white sample) to be excluded from the analytic sample for these reasons ($p < .001$). Potential implications of nonresponse/attrition between waves 1 and 2 on study results are described in the discussion section. Some demographic information that was not available in wave 2 was also recovered from waves 1 (education, household income) and 3 (nativity). Institutional review board approvals were obtained from Fordham University, the Centers for Disease Control and Prevention, and the New York City Department of Health and Mental Hygiene.

MEASURES

Outcome Variable: Mental Health Service Use

Mental health service use was captured by asking whether, in the past 12 months, the respondent had “seen or talked to a professional for a mental or emotional problem (e.g., a doctor, psychiatrist, psychologist, counselor, nurse, social worker, other health professional or clergy member),” which was defined as having used counseling. If they “had taken any medication prescribed to [them] to treat a mental or emotional condition” it was defined as having been prescribed medication. The dependent variable of interest was a combination of the two—any mental health service use in the preceding 12 months—to determine whether respondents had reached out for formal help. All variables available in the data set that were pertinent to Andersen’s model were included in the study, representing all three domains of the model: predisposing, enabling, and need factors.

Predisposing Factors

We assess eight total predisposing factors, which we divide into three categories: demographic variables, social structure, and past mental illness. Demographic variables include age (in categories), gender, and marital status. Social structure variables include educational attainment, employment status (employed, unemployed, missing), place of nativity (US born vs. foreign born/unreported), and social integration, which is measured by summing up the number of sources of social contact the person had in the past 30 days. Types of social contact include having at least one close friend/relative; interacting with friends/relatives face to face, by phone,

or by mail/e-mail; attending religious services at least twice a month; or being involved in at least one volunteer organization. Social integration counts were grouped into three categories (0–2, 3–4, and 5–6 social contacts); higher values indicate greater social integration. Having experienced past mental illness was captured by self-reported previous mental health diagnoses of PTSD, depression, or generalized anxiety disorder from a doctor or other health professional before December 31, 2005. The end date helped to ensure that the diagnosis occurred before the wave 2 assessment period.

Enabling Factors

We consider two enabling factors: annual household income and having received a routine medical checkup in the past 12 months. Household income was self-reported and divided into three categories: less than \$50,000, \$50,000 to less than \$75,000, and \$75,000 or more. Routine medical checkups in the past 12 months were self-reported and indicated access to care; this variable also served as a proxy for insurance status, which was not available in the data set.

Need Factors

We examine two need factors: perceived need for mental health services and evaluated need for mental health services. The perceived need for mental health services was captured by assessing the number of self-reported days of poor mental health respondents had experienced in the past 30 days. Participants who reported having poor mental health for >14 days in the past 30 days were perceived to have a need for mental health services (Zahran et al. 2005). Respondents who met criteria for probable PTSD or serious psychological distress (SPD) were considered to have an evaluated need for mental health services. Probable PTSD was assessed using the PTSD Checklist (PCL; Weathers et al. 1993), a self-reported, 17-item validated measure based on the Diagnostic and Statistical Manual for Mental Disorders (DSM-IV-R). Each item asked the extent to which participants were bothered by specific symptoms (ranging from 1 = not at all to 5 = extremely), worded in relation to the World Trade Center attack. Item scores were summed to create a total score (range 17–85), with higher scores indicating greater PTSD severity. A validated cut-off score of 44 or greater was used to indicate probable PTSD (Blanchard et al. 1996). SPD was measured using the Kessler 6 scale (K6), a six-item

screening tool for nonspecific psychological distress (Kessler et al. 2002), with a score of 13 or above indicating serious distress. Standardized Cronbach alphas for the PCL for Asians and whites were both 0.96, and for the K6, 0.92 and 0.91, respectively, indicating excellent internal consistency reliability. The perceived need factor indicates the presence of having either PTSD or SPD or having both conditions, to account for their moderate correlation in the sample. The measures were also similarly associated with mental health service use, so evaluating them separately did not yield additional information.

STATISTICAL ANALYSES

A total of 2,557 Asians and 32,111 white participants were included in the final analytic sample. We examined the distribution of participant characteristics using frequencies and percentages and calculated the prevalence of mental health service use by each factor for Asians and whites separately. Chi-square tests were used to detect racial differences in sample characteristics and to assess bivariate associations between each factor and mental health service use for each race. To identify race-specific factors that are independently associated with mental health service use, we applied logistic regression model procedures with variable selection criteria set less stringently at $\alpha = 0.10$ for Asian and white participants separately, to allow for the inclusion of meaningful predictors that may be significant in the final model. Results from backward variable selection were confirmed with stepwise variable selection.

For comparison purposes, we also ran a model with significant predictors in the white participant-specific model among Asian participants, in order to examine how the factors that are significantly associated with mental health service use for whites were associated with mental health service use among Asians. We derived covariate-adjusted odds ratios (AORs) and 95 percent confidence intervals (CIs) from the estimated model parameters to aid interpretation. All analyses were conducted using SAS 9.4.

RESULTS

PREDISPOSING FACTORS

Table 1 reports descriptive statistics for selected predisposing, enabling, and need factors, as well as mental health service use by race. The prevalence

of mental health service use in the past 12 months was significantly lower among Asians compared to whites (15.76 vs. 26.60 percent, $p < .001$). Among those who reported having used mental health services in the past 12 months (403 Asians and 8,542 whites), the type of mental health services used also differed significantly by race (not shown in tables, $p = .003$). For Asians, counseling was the most commonly reported type of service used, as opposed to medication only or both counseling and medication, and the prevalence of having used counseling was higher among Asians than it was among whites (48.14 vs. 39.70 percent). For whites, using both counseling and medication had the highest prevalence, and this was more prevalent among whites than among Asians (45.42 vs. 37.97 percent). For both Asians and whites, using medication only was the least prevalent treatment approach (13.90 and 14.88 percent, respectively).

Almost all of the predisposing sociodemographic factors differed significantly by race. Compared to whites, Asians had a lower proportion of participants ages 45–64 years (39.19 vs. 51.90 percent) and higher proportions of participants in the youngest (18–29) and oldest (≥ 65) age groups ($p < .001$); a lower proportion of participants were male (53.03 vs. 66.29 percent, $p < .001$) and married or cohabiting (67.31 vs. 71.83 percent, $p < .001$). Educational attainment did not differ by race (39.66 percent of Asians had less than a college degree, compared to 41.89 percent of white participants, $p = .123$). A lower proportion of Asian participants were employed (73.33 vs. 81.03 percent, $p < .001$). Approximately half of Asian respondents were foreign born or did not report their country of birth, compared to 5.99 percent of whites ($p < .001$). Asians reported lower social integration in the last 30 days than whites did, with 19.98 percent of Asians, compared to 30.68 percent of whites, having 5–6 sources of social integration and 31.44 percent of Asians, compared to 16.57 percent of whites, having only 0–2 sources ($p < .001$). A smaller proportion of Asians than whites reported having a previous mental health diagnosis (18.73 vs. 29.78 percent, $p < .001$).

ENABLING FACTORS

Asians were almost twice as likely to report earning the lowest annual family income category of less than \$50,000 as whites (18.42 vs. 38.52 percent, $p < .001$). There was no difference between whites and Asians in reporting having had a routine medical checkup in the past year (over two-thirds for both races).

TABLE 1. Sociodemographics, Mental Health Conditions, and Service Use in Asians and Whites

	Asian		White		p
	%	n	%	n	
Predisposing factor:					
Demographic:					
Age (years):					
18-29	11.11	284	5.48	1,761	<.001*
30-44	37.15	950	35.30	11,335	
45-64	39.19	1,002	51.90	16,667	
65+	12.55	321	7.30	2,345	
Missing	NA	NA	.01	3	
Gender:					
Male	53.03	1,356	66.29	21,285	<.001
Female	46.97	1,201	33.71	10,826	
Marital status:					
Married/living with partner	67.31	1,721	71.83	23,066	<.001*
Divorced/widowed/separated	11.22	287	11.79	3,787	
Never married	20.06	513	15.60	5,010	
Missing	1.41	36	.77	248	
Social structure:					
Education:					
<College graduate	39.66	1,014	41.89	13,451	.123*
≥College graduate	58.08	1,485	57.47	18,455	
Missing	2.27	58	.64	205	
Employment status:					
Employed	73.33	1,875	81.03	26,020	<.001*
Unemployed	25.69	657	18.51	5,944	
Missing	.98	25	.46	147	
Nativity:					
US born	49.94	1,277	94.01	30,187	<.001
Foreign born/unreported	50.06	1,280	5.99	1,924	
Social integration:					
0-2 sources	31.44	804	16.57	5,320	<.001
3-4 sources	48.57	1,242	52.75	16,938	
5-6 sources	19.98	511	30.68	9,853	
Past illness:					
Previous mental health diagnosis:					
Yes	18.73	479	29.78	9,564	<.001
No	81.27	2,078	70.22	22,547	
Enabling factor:					
Income:					
<\$50,000	38.52	985	18.42	5,915	<.001*
\$50,000-<\$75,000	16.23	415	19.23	6,174	
≥\$75,000	31.29	800	52.08	16,724	
Missing	13.96	357	10.27	3,298	
Routine medical checkup:					
Yes	68.24	1,745	67.70	21,738	.109*
No	29.53	755	31.49	10,111	
Missing	2.23	57	.82	262	
Need factor:					
Perceived need:					
Poor mental health days (≥14 in past month):					
Yes	16.19	414	17.06	5,477	.417*
No	81.23	2,077	81.78	26,259	
Missing	2.58	66	1.17	375	

TABLE 1 (continued)

	Asian		White		p
	%	n	%	n	
Evaluated need:					
Probable PTSD:					
Yes	17.44	446	17.07	5,482	.315*
No	79.82	2,041	82.51	26,496	
Missing	2.74	70	.41	133	
SPD:					
Yes	11.38	291	9.23	2,964	<.001*
No	86.35	2,208	90.32	29,003	
Missing	2.27	58	.45	144	
PTSD or SPD:					
Yes	20.73	530	18.90	6,069	.014*
No	78.37	2,004	81.03	26,021	
Missing	.90	23	.07	21	
Mental health service use in the last 12 months:					
Yes	15.76	403	26.60	8,542	<.001
No	84.24	2,154	73.40	23,569	
N		2,557		32,111	

Note.—PTSD = posttraumatic stress disorder; SPD = serious psychological distress.

* p-values with missing data excluded.

NEED FACTORS

For perceived and evaluated mental health-care need, there was no significant difference in reporting 14 or more days of poor mental health in the past month (16.19 percent of Asians vs. 17.06 percent of whites, $p = .417$), although Asians had a slightly higher prevalence of meeting criteria for either PTSD or SPD compared to whites (20.73 vs. 18.90 percent, $p = .014$).

FACTORS ASSOCIATED WITH MENTAL HEALTH SERVICE USE

The prevalence of mental health service use by each factor is reported separately for Asians and whites in table 2. Among Asians, greater mental health service use is significantly associated with four out of the eight predisposing factors we consider (it is significantly associated with gender, marital status, employment status, and previous mental health diagnosis; it is not significantly associated with age, education, location of nativity, or level of social integration), both enabling factors (household income and receipt of routine medical checkups), and both need factors (having 14 or more poor mental health days and having probable PTSD or SPD). Mental health service use was more prevalent among females (18.90 vs. 12.98 percent of males, $p < .001$); people who were divorced, widowed, or

TABLE 2. Mental Health Service Use by Associated Factors in Asians and Whites

	Asian			White		
	%	<i>m</i>	<i>p</i>	%	<i>m</i>	<i>p</i>
Predisposing factor:						
Demographic:						
Age (years):						
18-29	14.79	42	.405	25.50	449	<.001*
30-44	14.84	141		25.85	2,930	
45-64	15.97	160		28.25	4,709	
65+	18.69	60		19.32	453	
Missing	NA	NA		33.33	1	
Gender:						
Male	12.98	176	<.001	22.36	4,759	<.001
Female	18.90	227		34.94	3,783	
Marital status:						<.001*
Married/living with partner	13.65	235	<.001*	23.20	5,352	
Divorced/widowed/separated	24.39	70		40.24	1,524	
Never married	16.57	85		32.06	1,606	
Missing	36.11	13		24.19	60	
Social structure:						
Education:						
<College graduate	17.16	174	.164*	24.41	3,284	<.001*
≥College graduate	15.08	224		28.20	5,204	
Missing	8.62	5		26.34	54	
Employment status:						
Employed	13.92	261	<.001	25.00	6,506	<.001*
Unemployed	20.40	134		33.61	1,998	
Missing	32.00	8		25.85	38	
Nativity:						
US born	15.97	204	.766	26.84	8,101	<.001
Foreign born/unreported	15.55	199		22.92	441	
Social integration:						
0-2 sources	17.04	137	.484	30.98	1,648	<.001
3-4 sources	15.14	188		26.18	4,435	
5-6 sources	15.26	78		24.96	2,459	
Past illness:						
Previous mental health diagnosis:						
Yes	49.69	238	<.001	62.45	5,973	<.001
No	7.94	165		11.39	2,569	
Enabling factor:						
Income:						
<\$50,000	18.68	184	.010*	32.68	1,933	<.001*
\$50,000-<\$75,000	13.98	58		25.87	1,597	
≥\$75,000	13.88	111		25.45	4,257	
Missing	14.01	50		22.89	755	
Routine medical checkup:						
Yes	17.25	301	.002*	29.42	6,395	<.001*
No	12.32	93		20.49	2,072	
Missing	15.79	9		28.63	75	
Need factor:						
Perceived need:						
Poor mental health days (≥14 in past month):						
Yes	43.72	181	<.001*	54.85	3,004	<.001*
No	10.06	209		20.66	5,425	
Missing	19.70	13		30.13	113	

TABLE 2 (continued)

	Asian			White		
	%	<i>m</i>	<i>p</i>	%	<i>m</i>	<i>p</i>
Evaluated need:						
PTSD or SPD:						
Yes	37.17	197	<.001*	52.36	3,178	<.001*
No	10.03	201		20.59	5,357	
Missing	21.74	5		33.33	7	
<i>N</i>	2,557			32,111		

Note.—Percentage of service use = $m/n \times 100$ (with *m* indicating the number of respondents in specific categories within *n* subjects). PTSD = posttraumatic stress disorder; SPD = serious psychological distress.

* *p*-values with missing data are excluded.

separated (24.39 vs. 13.65 percent of people who were married/cohabiting and 16.57 percent of people who were never married, $p < .001$); the unemployed (20.40 vs. 13.92 percent of employed people, $p < .001$); those with a previous mental health diagnosis (49.69 vs. 7.94 percent of those without a prior diagnosis, $p < .001$); those with household income of <\$50,000 per year rather than \$50,000-<\$75,000 or \$75,000 or more (18.68 vs. 13.98 percent of those with an income of \$50,000-<\$75,000 and 13.88 percent of those with an income of \$75,000 or more, $p = .010$); those who had routine medical checkups (17.25 vs. 12.32 percent of those who did not, $p = .002$); those with 14 or more poor mental health days (43.72 vs. 10.06 percent of those with fewer than 14 poor mental health days, $p < .001$); and those with PTSD or SPD (37.17 vs. 10.03 percent of those with neither condition, $p < .001$).

Similar patterns were found among whites, with some exceptions. Among whites, being younger instead of older, being US born instead of foreign born, having higher compared to lower educational attainment, and having higher compared to lower household income were also significantly associated with greater prevalence of mental health service use. However, the bivariate associations could be confounded. For example, among white participants, income and social integration were correlated, higher income was associated with greater social integration (Spearman correlation coefficient $r = 0.04$, $p < .001$), and both were related to mental health service use. Thus, the association between less social integration and higher prevalence of mental health service use may be confounded by household income, which was controlled for in the covariate-adjusted models.

In the Asian-specific regression model (see table 3), three predisposing factors are significantly or close to significantly associated with mental health service use: gender, marital status, and history of past mental illness. Females had greater odds of service use compared to males (AOR = 1.29, 95 percent CI = 1.00–1.66). Those who were unmarried had greater odds of service use compared to those who were married/cohabiting (divorced/widowed/separated AOR = 1.41, 95 percent CI = 0.97–2.03; never married AOR = 1.41, 95 percent CI = 1.02–1.94), and having a previous mental health diagnosis was associated with a seven times greater odds of service use compared to not having a previous diagnosis (AOR = 7.18, 95 percent CI = 5.51–9.36). Foreign-born Asians or those who did not report their location of birth had lower odds of service use than those who were US born (AOR = 0.79, 95 percent CI = 0.61–1.02) at a marginal significance ($p = .07$). The only enabling factor significantly associated with mental health service use was having received routine medical checkups (AOR = 1.45, 95 percent CI = 1.08–1.95). Both need factors (perceived need and evaluated need) were associated with mental health service use. Having reported 14 or more poor mental health days (AOR = 3.07, 95 percent CI = 2.28–4.13) and having PTSD or SPD (AOR = 1.91, 95 percent CI = 1.42–2.56) were significantly associated with greater odds of mental health service use. It is of interest to note that many of the socioeconomic predisposing and enabling factors, namely, education, employment status, income, and social integration, were not significantly related to service use among Asians.

In the white-specific model (table 3), all of the predisposing factors were significantly associated with mental health service use. Specifically, female versus male gender (AOR = 1.34, 95 percent CI = 1.25–1.43), being unmarried versus married/cohabiting (divorced/widowed/separated AOR = 1.48, 95 percent CI = 1.35–1.62; never married AOR = 1.15, 95 percent CI = 1.05–1.25), having higher versus lower education (AOR = 1.31, 95 percent CI = 1.23–1.40), being unemployed versus employed (AOR = 1.21, 95 percent CI = 1.16–1.31), having higher (five to six sources) versus lower (zero to two sources) social integration (AOR = 1.18, 95 percent CI = 1.07–1.30), and having a previous mental health diagnosis versus no diagnosis (AOR = 9.26, 95 percent CI = 8.70–9.86) were associated with greater odds of mental health service use. White participants who were seniors (age 65 or over) versus younger (ages 18–29; AOR = 0.66, 95 percent CI = 0.55–0.80) and who were born in the United States ver-

sus being foreign born (AOR = 0.75, 95 percent CI = 0.65–0.85) had lower odds of mental health service use. For enabling factors, having household yearly income between \$50,000 and \$75,000, versus less than \$50,000, was associated with lower odds of mental health service use (AOR = 0.86, 95 percent CI = 0.78–0.95), while having a routine medical checkup was associated with greater odds of service use (AOR = 1.57, 95 percent CI = 1.47–1.68). For need factors, having reported 14 or more poor mental health days (AOR = 2.32, 95 percent CI = 2.13–2.52) and having PTSD or SPD (AOR = 1.50, 95 percent CI = 1.38–1.62) were significantly associated with greater odds of mental health service use.

The Asian-comparison model, which includes all of the factors from the white-specific model, yielded results that were very similar to those found in the Asian-specific model. Statistical significance remained the same, but gender became only marginally significant, and changes in the AORs in the model were very small. Compared with whites, the association between poor mental health days and having PTSD or SPD and odds of mental health service use was stronger for Asians (larger AOR) and the association between previous mental health diagnosis and odds of mental health service was weaker (AOR was lower) among Asians but with wider CIs.

DISCUSSION

Even in the context of a recent massive trauma, the significantly lower prevalence of mental health service use in the past 12 months among Asians compared to whites noted in this study is in line with the persistent pattern of underutilization of mental health services among Asian Americans compared to other races in the literature (US Department of Health and Human Services 2001; Sue et al. 2012; Cho et al. 2014). Also of note is the significant difference in the types of mental health service used. A larger proportion of Asians reported receiving counseling only versus medication only or both services, and a larger proportion of Asians reported receiving counseling than did whites. This finding is somewhat unexpected, given that prior research finds that Asians are more likely to attend to physical manifestations of psychological distress and seek medical treatment for mental health issues (Kung and Lu 2008; Sue et al. 2012) and are less likely to use talk therapy (Lau and Takeuchi 2001; Leong and Lau 2001; Kung and Tseng 2006). This greater-than-expected use of counseling services

TABLE 3. Logistic Regression Models for Association between Factors and Mental Health Service Use

	Asian-Specific Model			White-Specific Model			Asian-Comparison Model		
	AOR	95% CI		AOR	95% CI		AOR	95% CI	
Predisposing factor:									
Demographic:									
Age in years (ref = 18-29)									
30-44	...	...	1	1.13	.98	1.30	1.04	.63	1.73
45-64	...	...	1	1.08	.93	1.24	.86	.51	1.44
65+	...	...	1	.66	.55	.80	.90	.49	1.66
Missing	...	...	1	3.48	.31	39.58			
Gender (ref = male)									
Female	1.29	1.00	1	1.34	1.25	1.43	1.25	.96	1.62
Marital status (ref = married/living with partner)									
Divorced/widowed/separated	1.41	.97	1	1.48	1.35	1.62	1.44	.98	2.10
Never married	1.41	1.02	1	1.15	1.05	1.25	1.45	1.00	2.09
Missing	4.22	1.85	1	1.14	.75	1.74	4.76	1.76	12.83
Social structure:									
Education (ref = <college graduate)									
≥College graduate	...	...	1	1.31	1.23	1.40	.97	.72	1.30
Missing	...	...	1	1.44	.97	2.13	.39	.13	1.18
Employment status (ref = employed)									
Unemployed	...	...	1	1.21	1.16	1.31	1.37	.99	1.90
Missing	...	...	1	.97	.57	1.67	1.20	.32	4.49
Nativity (ref = US born)									
Foreign born/unreported	.79	.61	1	.75	.65	.85	.82	.63	1.07
Social integration (ref = 0-2 sources)									
3-4 sources	...	...	1	1.07	.98	1.17	1.14	.84	1.54
5-6 sources	...	...	1	1.18	1.07	1.30	1.21	.83	1.78
Past illness:									
Previous mental health diagnosis (ref = no)									
Yes	7.18	5.51	1	9.26	8.70	9.86	7.29	5.57	9.55
Enabling factor:									
Income (ref = <\$50,000)									
\$50,000-<\$75,000	...	...	1	.86	.78	.95	.81	.55	1.20
\$75,000 or more	...	...	1	.97	.89	1.06	1.21	.86	1.70
Missing	...	...	1	.78	.69	.88	.98	.64	1.49
Routine medical checkup (ref = no)									
Yes	1.45	1.08	1	1.57	1.47	1.68	1.49	1.11	2.00
Missing	.91	.38	1	1.78	1.28	2.47	1.00	.41	2.45
Need factor:									
Perceived need: poor mental health days (ref = <14 days)									
≥14 days	3.07	2.28	1	2.32	2.13	2.52	3.12	2.31	4.22
Missing	1.76	.85	1	1.64	1.26	2.13	1.72	.81	3.66
Evaluated need: PTSD/SPD (ref = no)									
Yes	1.91	1.42	1	1.50	1.38	1.62	1.95	1.44	2.63
Missing	1.92	.63	1	1.50	.50	4.49	1.84	.59	5.69
N		2,557			32,111			2,557	

Note.—The two race-specific models are obtained by a backward-selection method with selection criterion $\alpha = .10$. The Asian-comparison model includes all variables in the white-specific model for comparison. AOR = covariate-adjusted odds ratio; CI = confidence interval; PTSD = posttraumatic stress disorder; SPD = serious psychological distress.

may be attributable to post-9/11 outreach mental health programs such as Asian LifeNet and Project Liberty, which provided short-term counseling for acute mental illnesses using bilingual staff (Asian American Federation 2005). Many of these services were provided in non-mental-health settings such as social service or church-based community centers with hired mental health professionals, potentially reducing the stigma of mental health service use. Such exposures may have led to continued counseling or a greater likelihood of using this type of service when mental health needs reemerged later.

The strongest predictors of mental health service were having had a past mental illness (predisposing factor) and perceived need for mental health services. Past mental illness—as indicated by having a previous mental health diagnosis of depression, anxiety disorder, or PTSD after the World Trade Center attack—was the factor most strongly associated with mental health service use for both racial groups; a previous mental health diagnosis increased the odds of service use by over seven times for Asians and over nine times for whites. Having a history of a clinically diagnosed mental disorder may reflect greater receptivity to treatment or the presence of more serious or long-standing problems in both groups, which may cause participants in both groups to be more likely to seek prior professional help (Mojtabai et al. 2002). A mental health diagnosis could also be the “entry point for treatment” (Pottick et al. 1995; Brackbill et al. 2013), signifying knowledge of available resources, thereby increasing the chance of recent service use when conditions necessitated it.

Perceived need for mental health services was also strongly associated with service use for both races, exerting the second highest influence among all factors. Having 14 or more poor mental health days in the past month increased the odds of service use by more than three times for Asians and more than two times for whites. Although the literature suggests that Asians are less likely to acknowledge psychological distress (Kung and Lu 2008), our findings suggest that once it is recognized, it may become a driving force to seek treatment. This highlights the importance of mental health literacy in terms of self-awareness of psychological distress and the need to seek help. The greater odds of mental health service use among those with perceived mental health problems may be partly attributable to the widely publicized traumatic effect of the disaster, which may have educated the public and destigmatized mental distress. This may have been particularly important for Asians seeking treatment, given their relatively low

mental health literacy and high stigmatization of mental illness (Yang et al. 2007). As mentioned earlier, preventive outreach mental health and public education programs staffed by bilingual professionals and targeting Asian communities (Asian American Federation 2003) could also have enhanced individuals’ self-awareness and motivation to seek help.

Evaluated need for treatment, which we assessed by using standardized measures of PTSD (using the PCL) and SPD (using the K6 scale), had a weaker relationship with service use compared to the more subjective measure of perceived need (determined by self-report of 14 or more poor mental health days). Still, meeting the criteria for PTSD or SPD elevated the odds of service use by almost two times among Asians, although the effect was smaller for whites. The standardized measures of mental health status (such as the ones we use to determine probable PTSD and SPD), although they are to a certain extent more precise, may not be as comprehensive in capturing the overall psychological distress in individual experiences, which seems to be the main driving force for seeking mental health help.

The majority of the predisposing sociodemographic factors were not associated with mental health service use among Asians, with the exception of marital status, gender, and, marginally, location of nativity, while all of these factors showed significance among whites. Being married or cohabiting was associated with lower odds of mental health service use for both races, potentially because these individuals receive support from their partners, and the stress of relationship loss or difficulties experienced by those who are widowed, divorced, or separated may lead to treatment seeking (Wang, Berglund, et al. 2005). Among both Asians and whites, women were more likely to seek help than men, which is consistent with previous literature suggesting that men have greater perceived stigma toward mental health treatment and women are more likely to recognize their distress as a mental health problem (Kessler, Brown, and Broman 1981; Mackenzie, Gekoski, and Knox 2007). Immigrants’ lower tendency to use mental health services may be explained by the language barrier and their limited knowledge of access (Lin and Cheung 1999; Derr 2015). The uniquely large Asian communities in the New York metropolitan area and the availability of health and mental health professionals of similar cultural and linguistic backgrounds might have reduced the influence of these barriers to service use. These resources may, however, be less available for white immigrants in the area, causing greater barriers to their ability to access mental health treatment.

Predisposing factors such as higher education, higher social integration, and being employed predicted higher odds of service use among whites but not among Asians. This could be explained by the association between higher socioeconomic status (whites in this sample had higher socioeconomic status than Asians did), more knowledge about mental health resources in the community (Nicdao et al. 2008), and greater access to health insurance coverage through employment among whites. Postdisaster outreach efforts to provide mental health services in the Asian community might have reduced some of the barriers to care among Asians due to their relatively disadvantaged socioeconomic position. Income, included as an enabling factor, was also not associated with mental health service use among Asians; among whites, the middle-income group had slightly lower odds of service use. The free services offered by governmental and nongovernmental organizations such as Project Liberty and the Red Cross (Felton 2002; Kapucu 2007) and Medicaid coverage could also have made services more accessible to lower-income individuals.

Finally, having had a routine medical checkup proved to be a significant enabling factor, increasing the odds of mental health treatment by about 50 percent for both races. This is consistent with previous findings that regular contact with the health-care system increases mental health service use (Stuber et al. 2006), since general practitioners can serve as gatekeepers to detect mental health symptoms and treat them or can refer patients to mental health specialists. Receiving a routine medical checkup may also be a proxy measure of having health insurance, which was unavailable in the data but is potentially an important predictor of mental health service use.

LIMITATIONS AND STRENGTHS

The findings of this study should be considered in light of several limitations. First, the study was unable to capture ethnic diversity among Asian Americans in the sample. While there are similarities among Asian ethnic groups, it is possible that the various factors we examined may be associated with service use differentially among the Asian subgroups (Barreto and Segal 2005; Abe-Kim et al. 2007; Cho et al. 2014). Second, mental health service use was based on self-reports instead of clinical records, which could have resulted in misreporting, particularly underreporting, because of the stigma attached to mental health service use (Harris, Ed-

lund, and Larson 2005). Also, in the context of an epidemiological study on respondents' physical and mental health after the disaster, we were able to obtain basic information on mental health service use but could not determine the quantity and quality of service received or whether the services were provided by mental health specialists or general practitioners. Hence, the outcome indicates only whether treatment contact was made, making it challenging to gauge the extent to which study participants' mental health-care needs were met (Alegría et al. 2008) and by whom. Thus, an investigation into individuals' subjective evaluations of whether their mental health-care needs were met is warranted. Furthermore, additional potentially traumatic events or stressors that respondents might have experienced between the World Trade Center attack and wave 2 data collection could have affected their need for mental health services but were not accounted for in this study because of lack of information.

Third, there is also potential for selection bias due to nonresponse at baseline, dropouts from wave 1 to wave 2, and nonresponse or drop-ins at wave 2, which suggests that caution should be taken when interpreting our results. Asians had a higher rate of nonresponse from wave 1 to wave 2 compared to whites. To examine the potential influence of such attrition or nonresponse on mental health service use for both racial/ethnic groups, we conducted additional logistic regression analyses to assess differences between wave 2 respondents and nonrespondents in terms of their sociodemographic and mental health factors at wave 1 (information on mental health service use was not available in wave 1). For both Asian and white respondents, those with lower incomes and those who were US born versus foreign born had greater odds of being nonrespondents at wave 2 (not shown in tables). For Asians, those who were older and never married versus those who were married or cohabiting had greater odds of nonresponse; among whites, being younger, male, unmarried or cohabiting, unemployed, having a lower education, and having a higher likelihood of PTSD or SPD were associated with greater odds of nonresponse. The socioeconomic variables associated with nonresponse had different relationships with mental health service use, limiting our ability to estimate the overall direction of potential bias. Because greater mental health need is strongly associated with mental health service use (Wang, Berglund, et al. 2005), we took a closer look at this factor to examine the potential influence of nonresponse. For Asians, the mental health outcome (PTSD or SPD) was not significantly associated with nonresponse. However, whites

with mental health needs had greater odds of nonresponse than those without these conditions, which may have led to a slight downward bias in the prevalence of mental health issues, with healthier individuals remaining in the study. This would be similar to what was noted in other follow-up studies using the Registry data (Yu et al. 2015) and may have resulted in an underestimation of service use among whites. Hence, the difference in the prevalence of mental health service use among whites compared to Asians may be even greater than our current finding. But, nonresponse at baseline and nonrepresentative sampling may result in an upward bias in estimates of the prevalence of mental health issues, particularly for Asians, as indicated in a previous study based on the Registry data (Murphy et al. 2005), and thus may lead to a higher assessment of mental health service need. Considering that these biases may shape estimates of the prevalence of service use in opposite ways, the overall effect of these biases on our results may be minor. However, additional studies are needed to confirm these results.

Fourth, post-9/11 mental health diagnosis based on self-reporting may also be underreported, particularly if individuals were not informed of their diagnosis by professionals. This may be more likely among Asians, among whom mental health diagnoses carry strong stigma (Leong and Lau 2001); their practitioners, likely to be of the same background, might also shy away from diagnostic labels in an attempt to reduce patient denial and medication noncompliance (Kung 2001). The lack of information on health insurance coverage is another limitation, as it could greatly affect service use. Although information about health insurance may be picked up somewhat through other factors (e.g., those who had a routine medical checkup may be more likely to have health insurance than those who did not), examining this factor in future studies of mental health service use among Asian Americans is warranted.

Finally, while this study employed Andersen's behavioral model of health care, we were not able to assess the contextual factors emphasized in later versions of the model, which focused on macro- and community-level characteristics, including economic climate, relative wealth, politics, community-level stress, prevailing societal norms, and features of the health-care delivery system (Andersen 1995; Phillips et al. 1998). Changes in the environmental context that seem particularly relevant here include the economic downturn that occurred after the World Trade Center attack affecting the whole nation, the New York Area, and the Asian commu-

nities; the national policies of delegating resources and services to the affected population may also have influenced service use by the population in our study. At the community level, the availability of linguistically and ethnically compatible service providers for potential Asian service users is important, particularly when the majority are immigrants, many of whom have limited English language capacity (Le Meyer et al. 2009; Cho et al. 2014; Derr 2015; US Census Bureau 2015). We were also unable to assess the influence of perceived stigma on mental health service use in this study (Narikiyo and Kameoka 1992; Yang et al. 2007), which may be particularly salient for Asian Americans. These important contextual factors should be addressed in future studies to complement or build on the individual-level factors identified in the current study.

Despite these limitations, this is the single largest investigation of mental health service use among Asian Americans who were directly affected by the World Trade Center attack and the first large-scale study examining Asians' mental health service use after a recent massive trauma. The comprehensive recruitment efforts of the Registry through the use of Asian-language interviewers and outreach and follow-up efforts (Farfel et al. 2008) enabled the inclusion of less acculturated individuals and reduced study attrition, which is especially important for Asians because of their higher tendency for attrition in studies (Sue et al. 2012). The availability of data on non-Hispanic whites as the reference group, the breadth of information collected in the Registry, and the use of separate analytic models facilitated comparison and highlighted specific factors in each domain of Andersen's model that influenced service use for Asians. Finally, although the study used mostly cross-sectional data, the fact that post-9/11 mental health diagnoses were given at least 1 year before the assessment of service use lent itself as a predictor of later service use temporally.

STUDY IMPLICATIONS

As Andersen reflected on his model later in his career, he noted that some components of the model, specifically enabling factors, were more mutable than others and could be targeted to enhance health service use (Andersen 1995). In our study, routine medical checkups and income were key enabling factors. The fact that having regular access to the health-care system increased the odds of mental health service use points to its role as a bridge to mental health care. Thus, it is important to establish routine

screening of patients' mental health during regular medical checkups and alert physicians to patients' mental health needs so that physicians can provide treatment or refer patients to specialty mental health care when necessary (Chen, Kramer, and Chen 2003). In this study, income was not significantly associated with service use among Asians, and lower income among whites did not appear to be an impeding factor for mental health service use. While this may partly be due to Medicaid coverage, it is more likely to be attributable to the many free services provided to individuals who were directly affected by the disaster, as supported by the higher use of counseling than prescribed medication. This highlights the value of providing free mental health services postdisaster in future, especially among underprivileged groups.

Andersen (1995) notes that health beliefs have medium mutability for enhancing service use. Although data on it were unavailable in this study, the substantial stigma attached to mental illness and mental health treatment among Asians should be recognized as an important impediment to care (Leong and Lau 2001). Andersen (1995) also indicates that individuals' perceived need for care could be modified through health education programs. Our study finds that perceived need is highly associated with service use, especially among Asians, which could be a motivating force to seek treatment. This underscores the value of public mental health education for reducing stigma and increasing mental health awareness among Asians. Such public education efforts should be tailored to the languages, needs, and cultures of these minority communities (Norris and Alegria 2005). Particular attention should be given to those who have mental health symptoms but have not made any contact with the health-care system (Stuber et al. 2006; Brackbill et al. 2013). Hence, outreach efforts to individuals who are likely to have higher symptomatology due to disaster exposure should be continued through culturally and linguistically sensitive programs (Norris and Alegria 2005) such as the World Trade Center Health Program. The importance of postdisaster, large-scale public mental health education and outreach efforts is also applicable to future disasters.

Our study findings highlight the importance of prior access to the health and mental health-care system for current service use among Asians. Having a mental health diagnosis may have reflected prior contact with and knowledge of resources, as well as greater awareness of their mental health needs, resulting in greater mental health service use going forward. This highlights the value of practitioners informing service recipients of

their mental health condition in clear diagnostic terms. Because of strong cultural stigma toward mental illness, sensitivity to timing of diagnosis disclosure is key to preventing denial (Kung 2001).

In sum, despite massive outreach efforts post 9/11, Asians had lower mental health service use compared to whites, a phenomenon that has persisted over the past few decades (Sue et al. 2012). This finding speaks to the work that is still needed to reach, educate, and effectively treat this population. Future studies should further disaggregate by ethnicity within the Asian population to gain a more refined and differential understanding of mental health service use in this group. These studies should also examine the type of provider used and unmet need and evaluate community and other macrolevel factors that may influence mental health service use.

NOTE

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