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Traumatic Experiences and Associated Symptomatology in Asian American Middle School Students

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Abstract

This study examines the the prevalence of trauma experiences and traumatic stress in a diverse group of Asian American middle school students from a large urban school district. Descriptive statistics document the mean number of self-reported trauma experiences and posttraumatic stress subscale scores and how these rates differ by students' gender and Asian ethnic subgroups (including Chinese, Filipino, Japanese, Korean, Samoan, Southeast Asian, and Other). Furthermore, we assess the degree to which one or more traumatic events is associated with students' self-reported symptoms of severe traumatic stress and the types of traumatic events that are the most powerful predictors of elevated stress. These in-depth findings underscore the need for routine, school-based screening to identify and bring culturally-competent, trauma-informed support and interventions to Asian American middle school students experiencing traumatic stress.

Keywords: trauma, Asian American, universal screening, middle school, early adolescence

Exposure to potentially traumatic events is common in the general population and occurs most frequently among adolescents (Breslau, Wilcox, Storr, Lucia, & Anthony, 2004). Recent national estimates reveal that most adolescents have experienced at least one potentially traumatic event in their lifetime, and many have experienced repeated or cumulative experiences (McLaughlin, Koenen, Hill, Petukhova, Sampson, Zaslavsky, & Kessler, R. C., 2013, Saunders & Adams, 2014). For a small minority of youth, exposure to traumatic events can be associated with debilitating outcomes that meet clinical thresholds for psychiatric disorders such as posttraumatic stress disorder (PTSD), and many others experience a range of subclinical symptoms that can also have deleterious and persistent effects in school and in life (Copeland, Wolke, Shanahan, & Costello, 2015; McFarlane, 2010).

Despite the prevalence of traumatic experiences and their potential for long-term harm, systematic screening methods are not widely available to identify youth experiencing trauma—particularly those from hard-to-reach populations—and to assess the impacts of trauma on their wellbeing and possible need for intervention. Trauma exposure and its effects are particularly understudied among Asian American youth, a small but highly diverse ethnic minority. Drawn from a larger school-based screening for a randomized controlled trial of a trauma intervention, this exploratory study provides descriptive data on the types of trauma and associated symptomology experienced by a large sample of early adolescents representing multiple Asian ethnic groups.

Trauma Exposure, Effects, and Prevalence

Researchers and clinicians have traced poor mental health outcomes in youth to a wide range of traumatic and stressful life experiences, such as community violence, abuse and neglect, physical assault, health and medical issues, natural or manmade disasters, and the loss or separation of a loved one. For some individuals, these disparate types of traumatic experiences can provoke a predictable set of responses including intense fear, horror, and helplessness that impact one's ability to cope (Finkelhor, Turner, Shattuck, & Hamby, 2015). These events can be experienced directly, as a victim (e.g., being personally assaulted), or indirectly, as a witness (e.g., being exposed to community violence) (e.g., Price, Higa-McMillan, Kim, & Frueh, 2013; Tierens, Bal, Crombez, Loeys, Antrop, & Deboutte, 2012).

Just as there are many types of trauma experiences, their effects can vary significantly across individuals. Some youth experience potentially traumatic events with no harmful outcomes, but others, particularly those experiencing multiple or repetitive events, may experience debilitating symptoms. A large body of research

documents effects of trauma exposure on psychological and physical health, as well as cognitive and social functioning. In youth, empirical studies have found trauma exposure to be linked to clinical outcomes including PTSD (e.g., Fitzpatrick & Boldizar 1993; Jaycox et al. 2002), other anxiety problems (Pynoos, Steinberg, & Piacentini, 1999), and depressive symptoms (Jaycox et al. 2002*).* Higher dosages of traumatic experiences or more extreme forms of trauma correlate with higher rates of psychopathology (Pine & Cohen, 2002).

In addition to these psychopathological effects, trauma exposure in youth has been associated with attention and problem solving abilities in maltreated children suffering from posttraumatic stress disorder (Beers & De Bellis, 2002), and decreased IQ and reading ability (Delaney-Black et al., 2002) and lower grades and school attendance (Hurt, Malmud, Brodsky & Giannetta, 2001) in children exposed to urban violence. Children and adolescents exposed to traumatic events may also demonstrate adverse social-emotional outcomes. For example, studies have revealed impaired self-esteem among adolescents who were exposed to family violence and substance abuse (Ritter, Steward, Bernet, Coe, & Brown, 2002), as well as disrupted interpersonal relationships (Holt, Buckley, & Whelan, 2008). Other research documents risk-taking behaviors such as substance abuse in traumatized adolescents (Kilpatrick, Acierno, Saundres, Resnick & Best, 2000).

Some research studies focus on one type of trauma (e.g., witnessing community violence, surviving a natural disaster) to examine its particular effects on victims. However, efforts to identify individuals in a population who suffer from trauma-induced symptoms need to examine experiences with a broad range of events that can provoke distress (Turner, Finkelhor, Hamby, Shattuck, & Ormrod, 2011). National epidemiological studies of child and youth trauma typically ask respondents to endorse their personal experiences (as a victim and/or as a witness) from an inventory of potentially traumatic life events, to indicate the frequency and/or timing of these occurrences, and to report the presence of accompanying symptoms of distress. The 2008 National Survey of Children's Exposure to Violence (NatSCEV), for example, interviewed parents and youth using the Juvenile Victimization Questionnaire (Finkelhor, Ormrod, Turner & Hamby, 2005) about their experiences with 48 forms of youth victimization, covering conventional crime, maltreatment, victimization by peers and siblings, sexual victimization, and witnessing and exposure to violence (Turner et al., 2011). The National Comorbidity Survey Replication Adolescent Supplement (NCS-A) questioned adolescents and their parents about experiences with 19 potentially traumatic events covering interpersonal violence, accidents, and networking and witnessing events (e.g., death of a

loved one, witnessing death or serious injury) (McLaughlin et al., 2013). Similarly, the current study measures trauma exposure in terms of several types of stressful events that may occur in the lives of young adolescents.

Studies of the traumatic experiences of children and youth have used different definitions and methodologies, collectively yielding wide ranges of incidence and prevalence rates, but there is converging evidence that the experience of potentially traumatic events is commonplace for many children and adolescents (Saunders & Adams, 2014). A recent national study of 13-17 year olds revealed that 61.8 percent had experienced at least one potentially traumatic event in their lifetimes, nearly a fifth had experienced three or more (18.6 percent), and 4.7 percent met the criteria for PTSD. The most common events were the unexpected death of a loved one, manmade or natural disasters, and witnessing a death or serious injury (McLaughlin et al., 2013). Research has consistently reported the highest rates of trauma exposure in males (although females often report higher rates of PTSD symptoms), individuals from lower socioeconomic groups, and adolescents (Hatch & Dohrenwend, 2007). When reported in trauma studies, rates of exposure in Asian Americans overall have been lower than those of members of other racial and ethnic groups, particularly African Americans (e.g., Hatch & Dohrenwend, 2007, Woodbridge, Sumi, Thornton, Fabrikant, Rouspil, Langley, & Kataoka, 2016). However, the ethnic diversity within the Asian American population has been largely unaddressed in the trauma literature, as we discuss below.

Identifying Traumatic Stress in Asian American Ethnic Groups

About 14.7 million Americans self-identify as Asian, with another 2.6 million identifying as Asian and one or more other races (Hoeffel, Rastogi, Kim, & Shahid, 2012). Despite its small size, the population is characterized by extreme diversity in socioeconomic status, cultural background, immigration and acculturation experience, and language (Chu & Sue, 2011). Due to a number of cultural and methodological factors, including the rich diversity and relatively small size of this multi-ethnic population, there are challenges to empirically capturing the trauma experiences and associated levels of distress of young Asian Americans.

In school and community settings, Asian American youth suffering from the effects of trauma may not be readily identified given a pervasive “model minority myth,” which posits that, collectively, Asian Americans achieve success in educational and other domains and have few needs for support services (e.g., Kung, 2004; Leong & Lau, 2001; Lin & Cheung, 1999; Yeh, 2003). The model minority myth highlights the successes of some Asian Americans while underestimating the struggles of others (Wing, 2007; Srinivasan & Guillermo, 2000; U.S. Department of Health and Human Services, 2001). In fact, Asians are the only ethnic minority in the United States

who demonstrate a bimodal distribution of demographic risks, with some Asian American subgroups (e.g., Chinese, Japanese, Korean) showing lower risks and other subgroups (e.g., Pacific Islander, Southeast Asian) showing greater risks on indicators such as income, educational attainment, and insurance status (Giuliano et al., 2000; Kagawa-Singer & Pourat, 2000).

Because of small available samples in some locations, Asian Americans are often underrepresented in research, and studies that do report on Asian Americans often present aggregated data findings from divergent subpopulations (e.g., grouping Chinese Americans with Pacific Islanders). Though often necessary to achieve adequate statistical power, this practice can obscure important within-group differences and fail to identify needs of particular Asian American ethnic groups (Srinivasan & Guillermo, 2000; U.S. Department of Health and Human Services, 2001).

For example, in aggregate, Asian Americans report higher educational attainment and incomes than the general population; however, Pacific Islanders (e.g., Samoans, Native Hawaiians), themselves a diverse subpopulation, are less likely than the general population to have these advantages and are more likely to live in poverty (Yee, DeBaryshe, Yuen, Kim, & McCubbin, 2007). Similarly, the relative disadvantages and risks of Southeast Asian Americans (e.g., those from Vietnam, Cambodia) are well documented (e.g., Ho, 2008; Spencer & Le, 2006). Families from these regions are more likely than other Asian American families to be refugee immigrants with limited economic and professional capital and, consequently, to reside in areas of high crime and community violence (Tam & Freisthler, 2015) and to lack access to health care and social services (U.S. Department of Health and Human Services, 2001). Efforts to identify traumatic experiences and their effects on youth should take into account the diversity of life experiences and risk factors in these segments of the larger Asian American population.

Researchers have also noted that in many Asian cultures, mental illness is considered highly stigmatizing and potentially damaging to the family reputation (Leong & Lau, 2001), which may dissuade individuals from disclosing mental or emotional concerns (such as trauma-induced distress) in research and clinical settings, or from seeking needed services. Many East and Southeast Asian cultures also emphasize the concept of filial piety, which posits that elder members of the extended family or community should be venerated and considered authorities over members of outside groups, such as service providers (Fung et al., 2011). Accordingly, Asian Americans experiencing stress may seek help from family members or traditional Eastern healers rather than from western practitioners. However, some recent work with young adolescents has suggested that Asian American families may

be more amenable to having their children receive mental health screening and services in school than in conventional clinical settings (Cummings, Ponce, & Mays, 2010; Guo, Kataoka, Bear, & Lau, 2014), a practice that we describe below.

Trauma Exposure and Symptoms in Asian American Youth

Studies that document trauma exposure among Asian Americans and their associated levels of distress are relatively sparse. When considered in aggregate, Asian American youth have reported lower risks for exposure to trauma experiences than their peers from other racial and ethnic groups. Woodbridge et al. (2016) documented lower rates of self-reported exposure to several traumatic events, including direct and indirect experience of physical assault, and commensurate symptoms of posttraumatic stress among Asian American adolescents than among their White, Latino, African American, and Native American peers. Likewise, Chen (2010) examined the impact of witnessing extreme community violence (e.g., shooting and stabbing, knife and gun activity) on behavior problems in Asian American (n = 138) and African American adolescents (n = 763), finding that exposure to extreme violence predicted internalizing symptoms in African American students but not in Asian American students. Chen hypothesized that the low base rate of violence exposure reported by Asian Americans may have provided insufficient variability to detect differences in outcomes.

A few studies on trauma experiences of Asian Americans come from regions where there are large concentrations of ethnic groups and focus primarily on physical abuse and community violence. A study of 614 college students at the University of Hawaii, which included Native Hawaiian, Filipino, other Asian, and European American students, found self-reported violence victimization (physical and sexual) among 34 percent of participants, with few ethnic differences. Interpersonal victimization (which included a corresponding psychological reaction, such as fear or helplessness) was associated with PTSD symptomatology and other markers of psychopathology. The experience of stressful life experiences (e.g., death of a family member, being arrested) further related to some psychopathology symptoms but not to PTSD (Archambeau et al., 2010). The authors highlight that the prevalence rates and relationships between victimization and psychopathology from these understudied Asian ethnic groups replicate findings from studies of primarily European Americans.

A few other works suggest relative risks for violence victimization among some Asian ethnic groups. A study of 80 English-speaking Southeast Asian adolescents (Cambodian and Vietnamese) reported high rates of witnessing violence and directly experiencing victimization (Ho, 2008). In that study, more than three-quarters (77.5

percent) of participants had witnessed a violent crime or act of serious physical aggression and 43.7% had been a direct victim of a violent event, higher rates of victimization than those observed in White, Hispanic, and African American students participating in a national study. Experiences with physical aggression and violent crime were further associated with posttraumatic stress symptoms among witnesses to and victims of these events. Studies have also documented the overrepresentation of Southeast Asian families in child protective service cases, relative to other families in their communities (Ima and Hohm, 1991; Pelczarski and Kemp, 2006).

There is some evidence that Pacific Islander youth from Samoa also experience high rates of violent victimization relative to other Asian American peers. Examining referrals of Asian American/Pacific Islander families to child protective services in Washington State, Pelczarski and Kemp (2006) found that Samoan families of children age ten and younger represented only 1.7 percent of the state population but 10 percent of CPS referrals (these were not necessarily substantiated cases). A majority (64 percent) of these referrals concerned physical abuse (i.e., as opposed to physical neglect) among Samoan children, who had the highest rate among all Asian ethnic groups. Likewise, Samoan adolescents living in Hawaii were shown to initiate the highest rates of violence in a sample that also included Filipino, Hawaiian, and Japanese Asian adolescents (Mayeda, Hishinuma, Garcia-Santiago, & Mark, 2006).

These studies document relatively high levels of violence exposure and victimization, risk factors for trauma-induced distress, in some members of Asian American ethnic groups that have known socioeconomic and demographic disadvantages (e.g., Southeast Asians and Samoans). Less is known about their associated levels of distress and their exposure and response to other types of trauma, including non-violent stressful life experiences. Moreover, the types of trauma exposure and related symptoms experienced by youth from other Asian ethnic groups are understudied. The current study used a school-based trauma screening protocol to address these gaps in the literature.

School-Based Trauma Screening

Given high rates of trauma exposure in the population and the risk of traumatic stress in some understudied populations, the identification of youth suffering from traumatic stress has emerged as a critical task (Finkelhor, Turner, Shattuck, & Hamby, 2015; Hoagwood, Olin, Kerker, Kratochwill, Crowe, & Saka, 2007). Researchers and clinicians recommend systematic screening for trauma symptoms in middle school-aged youth, during the developmental stage that that is closest to the highest risk period (i.e., adolescence) (Nooner, Linares, Batinjane,

Kramer, Silva, & Cloitre, 2012). However, many youth from Asian ethnic groups lack access to conventional mental health care systems or experience barriers to getting needed treatment (Kataoka, Zhang, & Wells, 2002; Santiago et al., 2015).

One promising approach for identifying trauma symptoms and possible treatment needs in hard to reach populations like Asian American youth is the use of universal screenings in public schools. Unlike conventional mental health care providers, school-based clinicians have the capacity, through regular school-wide screenings held during the school day, to reach a broad cross-section of youth, including those not easily identified through other mental health services (Adelman & Taylor, 2012; Cole, O'Brien, Gadd, Ristuccia, Wallace, & Gregory, 2005). School-based universal screenings typically use measures that can be administered in a group setting as an efficient approach for identifying individuals who may be at risk for elevated distress, though they are not intended to be diagnostic. Instead, large screening protocols can measure exposure to a wide range of potentially traumatic events and corresponding symptoms of distress and identify students who may need follow-up evaluation by a trained clinician.

Given low usage of mental health treatment services among Asian Americans with need and identified barriers to other types of mental health services (e.g., Chu & Sue, 2011; Kung, 2004), Asian American students with trauma-related symptoms may be particularly well served by a school-based approach to identifying distress and offering culturally competent intervention. Guo and colleagues (2014) found that Asian American middle school students in need of mental health services who were identified and referred by school-based screening had high parent consent rates for treatment and did not differ from Latino students in attendance or continuation of mental health services (Guo, Kataoka, Bear, & Lau, 2014). Cummings and colleagues (Cummings, Ponce & Mays, 2010) found in a national sample of students in grades 7-11 that Asian American/Pacific Islander students were significantly less likely than White students to receive counseling outside of school, but there were no racial or ethnic differences in use of school-based mental health services. For the current study, the implementation of a school-based trauma screening in several middle schools afforded an opportunity to examine trauma and its symptoms in a diverse sample of Asian American youth, as described below.

The Current Study

The current study aims to document the types of trauma experiences and associated symptomatology in Asian American middle school students. We also underscore the potential of universal trauma screenings in middle

schools to identify hard-to-reach youth who may be at risk for trauma-induced symptomatology.

The data reported in the current study were collected as part of a larger project that involved conducting screenings in 12 urban middle schools of a large, urban district to identify students who were experiencing traumatic stress symptoms following exposure to one or more of several types of trauma events. Students who reported both exposure to trauma and elevated levels of traumatic stress in the screening had an opportunity to participate in a randomized controlled trial examining a trauma-focused, cognitive-behavioral intervention. Woodbridge and colleagues (2016) previously reported on the relationships among trauma experience and traumatic stress, race/ethnicity, and gender in the full screening sample, which included 4,076 middle school students representing several racial and ethnic groups. The current study further examines the data from the 1,661 Asian American students who participated in the trauma screening.

In the initial study, early adolescents overall reported having experienced on average nearly 4 trauma events in their lifetimes, both as victims and witnesses, and a subset (13.5%) reported symptoms of elevated distress. Overall, Asian American students reported significantly fewer trauma experiences than African American and Latino students (3.2 versus 5.1 and 4.1, respectively), and Asian American students overall reported the fewest traumatic experiences and the lowest traumatic stress scores among all racial/ethnic groups (Woodbridge et al., 2016).

For the current study, we disaggregated the data from the Asian American subsample of the larger study (n = 1,661) to examine the variability in traumatic experiences and associated traumatic stress levels of students from six Asian ethnic subgroups: Chinese, Filipino, Japanese, Korean, Samoan, and Southeast Asian. A seventh subgroup included students classified as Other Asian. Additional information about the sample is provided below.

We first examined students' exposure to specific traumatic events (as witnesses and as victims) and their corresponding levels of traumatic stress. Then for a subset of Asian American students who reported elevated stress (these youth represented three Asian ethnic groups), we examined the prevalence and types of trauma events experienced, as well as the types of trauma events that predicted elevated stress.

The following research questions (RQs) guided our analysis: RQ1: In a population of Asian American early adolescents in an urban school district, what is the prevalence of self-reported exposure to trauma events? Do prevalence rates differ by student characteristics (ethnicity and gender) or type of event (as a witness or victim)? For Asian American students exposed to trauma, what are their self-reported traumatic stress levels? RQ2: In a

subpopulation of Asian American early adolescents who reported elevated traumatic stress, what is the prevalence of self-reported exposure to trauma events? Does the occurrence of elevated traumatic stress differ by student characteristics or type of trauma event? RQ3: What factors (e.g., type of event, gender, ethnicity) predict elevated traumatic stress in Asian American middle early adolescents?

Method

Setting and Participants

Data were collected during four school years (2011-2015) in 12 middle schools of a diverse urban district in Northern California that educates more than 60,000 students annually. The district's middle schools serve a diverse student population, with nearly 25% of students being English learners, 63% receiving free or reduced-price lunch, and 14% of students receiving special education. About half of the students in the district identify as Asian and about one-quarter as Latino. Data on the immigration and acculturation status and spoken languages of participating students and families were not available, but a high proportion of students in the district were known to be from immigrant families.

For the larger study, 4,076 sixth-grade students, including 1,661 students of Asian ethnicity (40.8% of the total sample), participated in the trauma screening over four school years. The Asian American sample included students classified by a parent/guardian on a parent consent form as Chinese (*n*=1,242), Southeast Asian (*n*=100), Filipino (*n*=187), Pacific Islander (all were classified as Samoan) (*n*=27), Korean (*n*=24), Japanese (*n*=36), and other Asian (*n*=45).

We examined district records on race and ethnicity of students during the four years of the study to gauge the representativeness of the Asian American sample. The overall percentage of Asian American students participating in the screener was somewhat lower than the percentage of Asian American students in the district (53.2% of the district's students and 49.4% of the screener sample). However, as shown in Table 1, the standardized differences by race/ethnicity in the district and screener sample were quite low, ranging from .041 (for Latino students) to .156 (for White students), with a standardized difference of .092 for Asian students. Likewise, the distributions of the seven Asian ethnicities were similar in the district and sample (Table 2). Chinese students comprised a majority of Asian Americans in both the district and the current sample, which had similar distributions of Asian ethnicities and low standard difference scores, ranging from .003 for Korean students to .220 for students classified as other Asian. Because the distributions of Asian ethnic groups were similar in the district and the

sample, no sampling weights were used in the analyses.

In general, the distribution of Asian ethnicities was also similar across the 12 schools, with most ethnic groups being represented in most schools. This might be expected given that the district offers open enrollment and students did not necessarily attend schools in their residential neighborhoods. In the current sample, large concentrations of Asian students generally did not attend middle schools in neighborhoods characterized by high crime or community violence.

Procedure

At the beginning of the school year, the principal at each school sent a letter to parents/guardians of all sixth-grade students describing the study as a brief screening to determine students' level of traumatic stress. Consent forms, provided in English, Chinese, and Spanish, asked parents to actively consent to their child's participation in the trauma screening (and to record their student's gender, preferred language, and race/ethnicity) or to indicate that their children be excluded.

The research team conducted the screening within the first two months of the school year, via a group administration of the trauma screener (see Measures, below) during the school day. During the screening, students who did not have consent to participate or who did not assent to participating were given word games and puzzles or another teacher-selected activity to do during the screening. With the support of an onsite counselor, researchers administered the screener in a group format, typically in the classroom. Prior to completing the questionnaire, students were informed that (1) they have a right to not answer any question that makes them uncomfortable, (2) they can stop the screening at any time, and (3) their parents/caregivers will be informed of their general screening results but not their specific answers to any items. Administrators followed scripts that outlined the assent and confidentiality guidelines. The screener took approximately 15 minutes for students to complete. Administrators read all instructions aloud and provided an example of how to rate trauma experience and distress levels using each scale. Researchers also offered clarification and gave one-on-one assistance to students as needed during administration.

Each school had an assigned counselor to address any student distress, questions, or counseling needs identified during or incited by the screening process. All counselors in the district held a masters degree and had extensive training and experience in mental health, counseling, human service, and youth development; most also possessed a Pupil Personnel Services Credential (PPSC) and many were Licensed Clinical Social Workers (LCSW).

These counselors also supported the researchers who were conducting the screening and were available for questions or issues that arose during administration.

Researchers used documented guidelines to score the screening protocols and informed parents/guardians of the results by mail. All parents/guardians of participating students were given contact information for the school counselor and also received a trauma resource guide of locally available services and supports. If the screening revealed any violence and/or harm to the child or family, researchers strictly adhered to mandated reporting procedures. Researchers also called all parents of students with elevated trauma to discuss trauma-related services available in the school district, including the availability of the school counselor. Researchers did not share students' responses to individual items on the screener instruments but indicated that they would share the screener questions with families upon request. (There were no such requests.)

All procedures performed in this study involving human participants were formally approved by our institutional review board and in accordance with the ethical standards of our institutional and/or national research committee. All researchers working in schools received intensive training on confidentiality, abided by the district's data sharing agreement, and signed our institution's confidentiality contract.

Measures

Trauma Events. We used the Traumatic Events Screening Inventory-Child Report Form-Revised (TESI-CRF-R; Ippen et al., 2002) to assess the types and numbers of trauma events youth experienced. The TESI-CRF-R is a brief self-report survey that assesses the traumatic experiences of children (ages 6-18) including injuries, hospitalizations, domestic violence, community violence, disasters, accidents, and physical assault. The TESI-CRF-R operationalizes the occurrence of bullying by asking respondents about their experiences as witness of or victim to physical assault and the threat of harm. The inventory was modified slightly to include 13 items in a self-report survey format appropriate for group administration in a school environment. Respondents were asked, for example, "Have you ever been in a serious accident, where you could have been badly hurt or even killed?" Although psychometric properties specific to the TESI-CRF-R are not yet available, the original TESI-C interview (from which the survey was adapted) was validated on pediatric trauma patients, indicating interrater reliability of clinician's scoring of videotaped interviews ($\alpha = .81$ to .85), and convergent validity with the TESI-Parent version ($\alpha = .42$ to .91) for eight different types of trauma (Ribbe, 1996). In this sample of Asian American students, the Cronbach's alpha coefficient of the 12-item TESI-CRF-R was $\alpha = .64$; the moderate coefficient is expected given

the variability in trauma experiences among youth.

The TESI-CRF-R includes multiple dimensions of trauma, and we coded 12 of the 13 items according to two types of trauma experiences: (1) witness: 6 items pertaining to events that were not experienced directly by the student but rather were seen by the student or experienced by a relative, including *death of loved one*, *witness physical assault*, *witness assault involving weapon*, *injury or sickness of loved one*, *witness serious accident*, and *witness natural disaster*; and (2) victim: 6 items pertaining to events that were experienced directly by the student, including *physical assault*, *threat of physical assault*, *separation from caregiver*, *serious illness or injury of self*, *experience of serious accident*, and *attack by animal*. The last item, *other traumatic event*, remained uncategorized. Cronbach's alpha coefficients for the six witness and the six victim items were $\alpha = .48$ and $\alpha = .51$, respectively. We did not expect these item clusters to intracorrelate because they represent event counts and are not measures of underlying constructs.

Traumatic Stress. We used the Trauma Symptom Checklist—Child Version—Posttraumatic Stress Subscale (TSCC-PTS; Briere, 1996) to screen students for traumatic stress. The TSCC is a self-report measure that evaluates the impact of trauma as manifest in symptoms of posttraumatic stress disorder and related psychological symptoms. The 10-item Posttraumatic Stress (PTS) subscale included items related to intrusive thoughts, sensations, and memories of painful past events; fears; and cognitive avoidance of painful feelings. The TSCC is appropriate for children ages 8 to 16, is available in multiple languages, and is scored on a 4-point Likert scale (0 = never, 1 = sometimes, 2 = lots of times, 3 = almost all of the time). The TSCC was standardized on a large normative sample of racially and economically diverse children without histories of trauma. The clinical scales yield high internal consistency ($\alpha = .82$ to .89; Briere, 1996; Sadowski & Friedrich, 2000) and indicate strong concurrent and discriminant validity (Lanktree & Briere, 1995) with the Child Behavior Checklist and Youth Self Report (Achenbach, 1991a, 1991b). In the current sample, the Cronbach's alpha coefficient of the 10-item TSCC-PTS was $\alpha = .85$.

Results

Data Analysis

We examined student gender differences in exposure to trauma events (average occurrences of witness, victim, and total traumatic events on the TESI-CRF-R) and in traumatic stress (average PTS scores on the TSCC) using cross-tabulation and Chi-square tests. We examined ethnicity differences in exposure to trauma events and

traumatic stress on the TSCC using a random intercept multilevel model to account for the clustering of students within school. We conducted follow up comparisons to determine ethnic differences; seven Asian ethnicity categories resulted in 21 paired ethnicity comparisons; therefore to reduce Type I error, we conducted post hoc comparisons using an adjusted Bonferroni alpha of $p = .002$. (For comparable analyses on the subset of students reporting elevated traumatic stress, who represented three ethnic groups, we used an adjusted Bonferroni alpha of $p = .016$.) We also calculated effect sizes (Cohen's d) as a difference in means divided by root mean square error for the model when testing for average differences in the number of trauma events.

RQ 1: Prevalence of Trauma Experiences and Stress by Ethnicity and Gender and Type of Event

Table 3 presents the ethnicity and gender of participating Asian American students, their mean number of self-reported traumatic experiences (as a witness, as a victim, and in total), and their mean posttraumatic stress scores. The occurrences of traumatic events are the average sum of the 6 witness items, the 6 victim items, and the 13 total items on the TESI-CRF-R. For comparison, we also include these data for White, Latino, and African American participants as reported by Woodbridge et al. (2016). On average, Asian American students had experienced 3.21 traumatic events; the comparable numbers of events reported by participating white, African American, and Latino students were 3.54, 5.12, and 4.02, respectively. Notably, Samoan students in our sample reported the largest number of traumatic events witnessed (2.93) across all (Asian and non-Asian) racial and ethnic groups.

Trauma experiences and associated symptomology by ethnicity and gender. Table 4 presents the findings by ethnicity for total trauma experiences (average sum of experiences as a witness and as a victim) and PTS scores. Across ethnic subgroups, Samoan and Filipino students reported experiencing the most total trauma, averaging 4.55 and 3.89 events, respectively. Both reported significantly more total trauma events than students classified as Chinese (Samoan $d = -0.61$, Filipino $d = -.33$), and Samoan students reported significantly more total trauma events than students classified as Japanese ($d = -0.84$) (Table 4, upper diagonal).

Average PTS scores ranged from a low of 42.57 for Japanese students to a high of 47.32 for Filipino students. There were no significant ethnic differences in PTS scores (Table 4, lower diagonal).

Table 3 presents the findings for gender by trauma events and traumatic stress. Asian American males reported experiencing significantly more total trauma events than their female counterparts (3.51 versus 2.91, $d = 0.25$) and had significantly higher distress as measured by the PTS scale (47.13 versus 45.80, $d = 0.15$).

Table 5 presents findings for types of trauma (witness and victim) by ethnic subgroup. Samoan students reported significantly more trauma experiences as a witness than all other ethnicities except for Filipino students (Chinese d = -0.96, Japanese d = -1.05, Korean d = -0.89, Southeast Asian d = 0.82, Other Asian d = 0.88). Also, Filipinos were more likely than Chinese students to have witnessed a trauma (d = -0.34) (Table 5, upper diagonal). There were no significant ethnic differences in reports of trauma as a victim (Table 5, lower diagonal).

As shown in Table 3, males reported experiencing significantly more trauma events as victims than did females (1.53 versus 0.94, d = 0.47). There was no gender difference in reports of witnessing traumatic events.

Occurrences of specific trauma events. Table 6 presents the percentage of Asian American students experiencing specific types of trauma events (as a witness or victim) by ethnicity and gender. Overall, the most prevalent trauma events witnessed were the injury or sickness of a loved one (47.7%), and death of a loved one (45.3%). Both of these experiences were most frequently reported by Samoan and Filipino students. A large minority of Asian American adolescents had also witnessed a physical assault (41.7%); a very small percentage had witnessed an assault that included a weapon (2.9%). A majority of Samoan and Korean students had witnessed a physical assault (59.3% and 50%, respectively), as had nearly half of the Asian American male students (46.8%).

The most prevalent experiences as a trauma victim were being physically assaulted (e.g., slapped, hit) (36.0%) and having a serious illness or injury (27.2%). Students most frequently reporting being an assault victim were classified as Southeast Asian (43.9%) and Korean (41.7%). Nearly a quarter of students reported having experienced a traumatic event not specified in the TESI-CFR-R (23.5%; 18.6% of males and 28.3% of females).

RQ 2: Proportion and Characteristics of Asian Early Adolescents with Elevated Traumatic Stress

To identify the characteristics and experiences of students reporting elevated traumatic stress, we isolated those having a T-score of 58 or higher on the PTS subscale. Following Woodbridge et al. (2016), we used this cutoff score because it represents the top 20% (or 80th percentile) of students reporting traumatic stress to include students experiencing clinically diagnostic symptoms as well as those experiencing subclinical symptoms who might benefit from follow up evaluation. Fewer than ten students in the Japanese, Korean, Samoan, or other Asian ethnic subgroups met the criterion for elevated traumatic stress, so students from those subgroups were excluded from these analyses.

Table 7 documents the mean number and standard deviation of reported trauma events by type (i.e., victim or witness) and by ethnicity and gender of the subset of students with elevated traumatic stress. The resulting subset

of students with elevated distress included 194 students or 12.7% of the sample of students from the following three three ethnic subgroups: Chinese (n = 147), Filipino (n = 29), and Southeast Asian (n = 18). More than half of this subset was male (54.6%). Those reporting elevated traumatic stress reported on average 5.54 total trauma events.

Trauma experiences and associated symptomology by ethnicity and gender. Table 8 presents average differences in total trauma events (upper diagonal) and PTS scores (lower diagonal) by the three ethnic subgroups. There were no significant ethnic differences in the average number of total trauma events experienced or PTS scores. Likewise, as shown in Table 9 there were no significant ethnic differences in the experience of trauma as a witness (upper diagonal) or a victim (lower diagonal). Males were significantly more likely than females to report having been a victim of a trauma event (2.74 versus 2.09, d = 0.47), but there were no significant gender differences in total trauma experiences or PTS scores (Table 7).

Occurrences of specific trauma events. Table 10 presents the percentage of students with elevated traumatic stress reporting witnessing and personally experiencing specific trauma events. The trauma events most frequently witnessed by students with elevated stress were a physical assault (68.0%), the injury or sickness of a loved one (66.5%) and the death of a loved one (52.1%). Chinese students were most likely to have witnessed an assault (70.7%), and Filipino students were most likely to have a loved one injured or sick (75.9%), and to have experienced a loved one's death (69.0%).

In terms of personal victimization, students with elevated traumatic stress were most likely to have experienced a physical assault (67.5%), threat of a physical assault (50.0%) and a serious illness or injury (41.8%). Half of these students also reported having experienced a traumatic event not included in the TESI-CRF-R (34.0% of males and 69.3% of females).

RQ 3: Predicting elevated traumatic stress from trauma events and student characteristics.

To account for the clustering of participating students within schools, we used multilevel logistic regression to predict elevated distress. We included each of the 12 TESI-CRF-R trauma items as an independent predictor in the logistic regression models to identify the significant predictors of traumatic stress (measured by the TCSS-PTS subscale).

Table 11 presents the logistic regression findings. Four of the 12 trauma events were significant predictors of elevated traumatic stress (all were victim experiences rather than witness experiences): (1) *been in a serious accident* (odds ratio = 1.64); (2) *physically assaulted* (odds ratio = 2.14); (3) *threatened with physical assault* (odds

ratio = 2.74); and (4) *separated from caregiver* (odds ratio = 3.16). The null model has an error rate of 12.45 percent. The proportional reduction in error rate obtained by the 12-item fitted model is 6.37 percent.

To identify the most parsimonious model to predict elevated traumatic stress, we then ran a logistic regression including the three most effective predictors (*separated from caregiver, threatened with physical assault, physical assault*) (Table 12). The parsimonious 3-item model accounted for 84.62 percent of the reduction in error rate produced by the full 12-item model. No interactions among the three items were significant predictors of PTS scores. We also included the three predictor items in separate models to assess the impact of ethnicity, gender, and all interactions. We found no main effect of ethnicity or gender and no significant interactions.

Discussion

This study is the first we are aware of to document the prevalence of several types of potential traumatic life events and associated stress symptoms in a large sample of Asian American early adolescents representing multiple ethnic subgroups. We found that overall many students reported exposure to potentially traumatic events and a portion of the sample reported having elevated stress symptoms. Similar to findings of studies examining trauma experiences across multiple racial and ethnic groups (e.g., Woodbridge et al. 2016), Asian American male students were more likely than Asian American female students to be victims of trauma events, and in the current study, males also had higher self-reported PTS scores of traumatic stress. We also identified some differences in exposure to trauma events among ethnic groups, notably among Samoan and Filipino adolescents. Finally, this study highlights the potential of universal school-based screenings to identify distress in students from populations that are typically underserved by mental health care systems.

Overall, Asian American students reported having experienced more than three potentially traumatic events in their lifetimes, and those who reported elevated distress had experienced more than five trauma events. Among the most common trauma events experienced by students in our sample was witnessing a physical assault, which was reported by 41.7 percent of the sample and nearly 60 percent of Samoan students. This replicates findings from general population studies of high rates of witnessing interpersonal violence (McLaughlin et al., 2013). Given high rates of physical abuse in some communities with high concentrations of Asian American families (Pelczarski & Kemp, 2006; Ima & Hohm, 1991), the relationship between assault and elevated distress underscores a need for early identification of Asian American youth with traumatic stress symptoms.

In addition to witnessing violence, Asian American students also reported high rates of other stressful life

events that have not been widely studied in Asian American youth. Specifically, a large minority of Asian American students overall had experienced a potentially traumatic event involving a loved one, including nearly three-quarters of Samoan students and more than 60 percent of Filipino students.

Previous research has identified significant exposure to violence, such as physical assault, in some Asian American ethnic groups, but the incapacitation and loss of caregivers has received less attention in the literature. The resilience of traumatized youth has been linked to the presence of available and nurturing caregivers (Goslin, Stover, Berkowitz, & Marans, 2013), and, given the emphasis in many Eastern cultures on the family and extended family unit (e.g., Fung et al., 2011), Asian American students may experience particular vulnerability in the absence of a caregiver.

This study further identified relative vulnerability to trauma experiences in Samoan students. These ethnic differences were mainly observed in the types of trauma that students witnessed (i.e., rather than experienced), and there were no ethnic differences in scores on the measure of elevated stress. Moreover, we found no ethnic differences (among Chinese, Filipino, and Southeast Asian students) in the quantity or types of trauma experienced among a subsample of students reporting symptoms of elevated stress. As noted above, the Asian American students in our sample generally did not attend schools in neighborhoods characterized by high crime or violence, which may account in part for the low rates of personal victimization reported.

We did find that the Samoan students in our sample experienced the highest rates of trauma exposure (reporting experiencing 4.6 total trauma events on average), and they witnessed significantly more potentially traumatic events than their peers from other ethnic groups, except for Filipino students. These findings support other reports of Samoan children experiencing high rates of violence relative to their peers (Pelczarski & Kemp, 2006), and suggest that these Asian adolescents may experience trauma at similar rates as youth from other racial groups, refuting the perception of Asian Americans as a model minority.

We also found some evidence of relatively high rates of exposure to potentially traumatic events among young Filipino adolescents, a population for whom there is little information about trauma exposure and symptoms. Although their PTS scores were not significantly different from students of other ethnicities, Filipino students reported the highest average PTS score among the Asian ethnic groups and were significantly more likely to witness trauma events than Chinese students, who reported relatively low trauma exposure. In one study of college students in Hawaii, Archambeau et al. (2010) documented relatively high endorsement of interpersonal violence compared

with other Asian ethnic groups and European Americans (43 percent of Filipinos and 35 percent of the sample), and symptoms of psychopathology in 20.6 percent of Filipinos. More study of this ethnic group could yield more conclusive findings about their experiences with and responses to traumatic events.

Given known demographic and socioeconomic risks of Americans from Southeast Asian cultures, we might have expected similarly high rates of trauma exposure. However we did not find that the Southeast Asian adolescents in the district we studied experienced more traumatic events or distress than their Asian American peers. The particular disadvantages and trauma experiences of Southeast Asians living in America are often discussed in light of their refugee experiences (e.g., Spencer & Le, 2006). The urban center of the current study experienced significant immigration from Southeast Asia during the waves of immigration documented during the 1970s and 1980s (e.g., Gordon, 1987). It may be that the Southeast Asian American adolescents in our sample were multiple generations removed from the effects of that experience.

In addition to documenting descriptive data on trauma experiences in this population, we attempted to identify the trauma events that best predicted distress. The most effective predictors of elevated stress across three Asian American ethnic groups were similar to those most frequently reported in the sample, relating to caregivers and to physical assault: separation from a caregiver, threat of physical assault, and actual physical assault. However, our 12- and 3-item regression models excluded students from several Asian ethnicities. Additionally, these models only reduced the error rate related to prediction of elevated traumatic stress by about 6% over the null model, suggesting that our screening items do not measure one or more important factors related to elevated stress. For example, our models did not account for several constructs that have been associated with mental health outcomes in Asian Americans, such as immigration status (Spencer, Chen, Gee, Fabian, & Takeuchi, 2010), language barriers and level of acculturation (Yeh, 2003), and perceptions of mental illness and attitudes about seeking help (Leong & Lau, 2001). Future studies could include examination of these and other variables on the rates and predictors of elevated stress in Asian American adolescents.

Limitations

As an exploratory study, this work has limitations that should be noted. Although this study is based on a large sample of Asian American students, the generalizability of the findings outside of the Northern California area is unknown. Also, even though we made efforts to recruit Asian American students with the use of a Chinese consent form, the participation rate of Asian American students in the screening was lower than that of students

from other races/ethnicities.

Characteristics of the sample also resulted in analytic limitations. For example, although the sample resembled the district in terms of its Asian ethnic distribution, it was heavily skewed with Chinese students and the sample sizes for some ethnicities were quite small. Our analyses of students with elevated stress symptoms consequently excluded members of some ethnic groups (notably Samoans, who reported the highest rates of exposure to trauma events).

It is likely also that our protocol did not capture some traumatic experiences of students. The sensitive nature of the topics may have caused some students to not report some experiences. Although we made efforts to reassure students that their specific answers would be confidential and had a high level of student assent, students also may have resisted reporting on their traumatic experiences because of the requirement of research staff to report overall findings to their parents.

Furthermore, we chose screening instruments that could be administered efficiently in a school setting and that had some previous usage. However, there is limited psychometric information on the TESI-CRF-R, and neither the TSCC nor the TESI-CRF-R has been validated on Asian American adolescents. A relatively large portion of our sample (23.5 percent of the full Asian American sample and 50 percent of the elevated stress sample) reported having experienced a traumatic event that was not captured by the TESI-CRF-R, indicating that more study is needed of the specific types of trauma experienced by this population. Moreover, the PTS scale of the TSCC contained just ten items, which may have not been sufficiently sensitive to detect students' distress.

Conclusion and Future Directions

This study contributes data on historically overlooked and underserved Asian ethnic groups and reveals that some urban Asian American youth have experienced traumatic events at similar rates to youth from other racial and ethnic groups. Our findings suggest that some urban Asian American youth may experience higher rates of trauma exposure than national samples of youth. In a national sample of 13- to 17-year-old adolescents, for example, fewer than one-fifth reported exposure to three or more potentially traumatic events in their lifetime (McLaughlin et al., 2013). In contrast, our findings revealed that urban students from all Asian ethnic groups except Japanese had on average experienced more than three potentially traumatic events by sixth grade.

As self-report measures are an efficient and feasible way to preliminarily screen large numbers of students, including those who are typically hard to reach, future studies could address the sensitivity of self-report instruments

to detect trauma-related experiences and symptoms. Future research could also include validation of measures using participants from this population, or the development of other culturally sensitive screening instruments, taking into account findings from studies of Asian Americans' response styles to various types of measures (e.g., Hamamura, Heine, & Paulhus, 2008).

This work further lends support to a growing movement to adopt universal mental health screenings in school-based settings in order to identify students experiencing traumatic stress (Dowdy, Ritchey, & Kamphaus, 2010). Identification of these students through school-based screening, with culturally appropriate follow up treatment may be a useful step toward reducing the disparity in mental health care of Asian Americans. Given the relatively high rates of trauma experiences in some members of this population, there is a need for routine, universal screening and the integration of evidence-based, trauma-informed care into schools.

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Table 1

Race/Ethnicity of District Middle School Student Population and Trauma Screening Sample, 2011-2015

Race/Ethnicity[a]	Student Population			
	District (N = 39,341)	Screened (n = 3,364)	Differences Between Percentages	Standardized Difference
White (%)	11.8	16.9	5.1	0.156
Latino (%)	25.3	27.1	1.8	0.041
African American (%)	9.4	6.0	-3.4	-0.118
Native American (%)	0.5	0.6	0.1	0.014
Asian (%)	53.0	49.4	-3.6	-0.072

[a] Unknown race/ethnicity data were omitted. The full screener sample included 4,076 students.

Table 2

Asian Ethnicity of District Student Population and Trauma Screening Sample, 2011-2015

Ethnicity[a]	Student Population		Differences Between Percentages	Standardized Difference
	District (N = 20,186)	Screened (n = 1,661)		
Chinese (%)	67.1	74.8	7.7	0.165
Filipino (%)	12.5	11.3	-1.2	-0.036
Japanese (%)	1.9	2.2	0.3	0.022
Korean (%)	1.4	1.4	0.0	-0.003
Samoan (%)	0.7	1.6	0.9	0.107
Southeast Asian (%)	7.6	6.0	-1.6	-0.061
Other Asian (%)	8.7	2.7	-6.0	-0.220

[a] Unknown ethnicity data were omitted.

Table 3

Characteristics, Number of Traumatic Experiences, and PTS Scores of Screening Sample

Characteristic	Number (% of total sample)	Number of Trauma Experiences			PTS *T*-Score[d] (Mean, SD)
		Witness[a] (Mean, SD)	Victim[b] (Mean, SD)	Total[c] (Mean, SD)	
White	567 (13.9)	1.85 (1.39)	1.40 (1.38)	3.54 (2.54)	45.83 (9.32)
African American	203 (5.0)	2.72 (1.44)	2.05 (1.52)	5.12 (2.72)	47.79 (10.30)
Latino	910 (22.3)	2.13 (1.47)	1.57 (1.47)	4.02 (2.72)	46.89 (10.72)
Native American	23 (0.6)	2.55 (1.37)	2.00 (1.63)	4.82 (3.02)	46.73 (9.37)
All Asian	1,661 (40.8)	1.74 (1.33)	1.23 (1.29)	3.21 (2.37)	46.46 (9.00)
Ethnicity (Asian)[e]					
Chinese	1,242 (74.8)	1.65 (1.31)	1.19 (1.26)	3.06 (2.32)	46.46 (8.94)
Filipino	187 (11.3)	2.11 (1.32)	1.48 (1.29)	3.85 (2.33)	47.34 (9.52)
Japanese	36 (2.2)	1.5 (1.21)	0.78 (0.96)	2.50 (1.98)	42.33 (6.85)
Korean	24 (1.4)	1.75 (1.48)	1.50 (1.38)	3.63 (2.6)	45.587 (7.99)
Samoan	27 (1.6)	2.93 (1.54)	1.41 (1.39)	4.56 (2.46)	45.93 (7.94)
Southeast Asian	100 (6.0%)	1.84 (1.25)	1.42 (1.50)	3.58 (2.59)	47.12 (9.82)
Other Asian	45 (2.7%)	1.77 (1.43)	1.23 (1.40)	3.21 (2.70)	45.52 (8.93)
Gender (Full Sample)					
Male	2047 (50.2)	1.97 (1.40)	1.66 (1.45)*	3.86 (2.58)*	46.92 (9.49)*
Female	2029 (49.8)	1.89 (1.41)	1.17 (1.28)	3.38 (2.53)	46.21 (9.77)
Gender (Asian)					
Male	828 (49.8)	1.80 (1.33)	1.53 (1.38)*	3.51 (2.42)*	47.13 (9.14)*
Female	833 (50.2)	1.68 (1.34)	0.94 (1.12)	2.91 (2.29)	45.80 (8.82)

[a] Trauma experiences categorized as "Witness" include a total of 6 possible items.

[b] Trauma experiences categorized as "Victim" include a total of 6 possible items.

[c] Total trauma experiences include a total of 13 possible items, including an "other" item not categorized as witness or victim type.

[d] PTS *T*-Score = Post-Traumatic Stress *T*-Score from the *Trauma Symptom Checklist-Child Version (TSCC; Briere, 1996).*

[e] Asian ethnicity percentages are based total Asian American sample (n = 1, 661).

*p<.05 (comparison by gender)

Table 4

Average Differences in Reported Total Number of Trauma Events and PTS T-*Score by Ethnicity of Asian Sample*

	Adjusted Mean	Adjusted Mean	Average difference (effect size)[c] **Total trauma events** in upper diagonal and *PTS* in lower diagonal						
Ethnicity	**Total trauma events**[a]	*PTS*[b]	Chinese	Filipino	Japanese	Korean	Samoan	Southeast Asian	Other Asian
Chinese	**3.11**	*46.27*	_	**-0.77***	**0.53**	**-0.58**	**-1.43***	**-0.50**	**-0.08**
				(-.33)	**(.23)**	**(-.25)**	**(-.61)**	**(-.21)**	**(-.03)**
Filipino	**3.89**	*47.32*	*-1.05*	_	**1.30**	**0.20**	**-0.66**	**0.27**	**0.69**
			(-.02)		**(.55)**	**(.08)**	**(-.28)**	**(.11)**	**(.30)**
Japanese	**2.59**	*42.57*	*3.70*	*4.75*	_	**-1.10**	**-1.96***	**-1.03**	**-0.60**
			(.41)	*(.53)*		**(-.47)**	**(-.84)**	**(-.44)**	**(-.26)**
Korean	**3.69**	*45.66*	*0.61*	*1.66*	*-3.09*	_	**-0.86**	**0.07**	**0.50**
			(.07)	*(.19)*	*(-.35)*		**(-.37)**	**(.03)**	**(.21)**
Samoan	**4.55**	*45.82*	*0.45*	*1.50*	*-3.25*	*-0.16*	_	**0.93**	**1.36**
			(.05)	*(.17)*	*(-.36)*	*(-.02)*		**(.40)**	**(.58)**
Southeast Asian	**3.62**	*46.97*	*-0.70*	*0.35*	*-4.40*	*-1.31*	*-1.15*	_	**0.43**
			(-.08)	*(.04)*	*(-.49)*	*(-.15)*	*(-.13)*		**(.18)**
Other Asian	**3.19**	*45.23*	*1.04*	*2.09*	*-2.66*	*0.43*	*0.59*	*1.74*	_
			(.12)	*(.23)*	*(-.30)*	*(.05)*	*(.07)*	*(.19)*	

[a] Trauma events categorized as "Total" include 13 possible items, including a general "other" item not categorized as witness or victim type.

[b] PTS = Post-Traumatic Stress Subscale *T*-Score from the *Trauma Symptom Checklist-Child Version (TSCC; Briere, 1996).*

[c] Effect size is the mean difference divided by root mean square error for the model.

*Indicates significant differences between ethnic groups adjusted for multiple comparisons ($p < .002$), using Bonferroni post hoc contrasts.

Table 5

Average Differences in Reported Number of Trauma Events as Witness and Victim by Ethnicity of Asian Sample

	Adjusted Mean	Adjusted Mean	Average difference (effect size)[c] **Witness** in upper diagonal and *Victim* in lower diagonal						
	Witness[a]	*Victim*[b]	Chinese	Filipino	Japanese	Korean	Samoan	Southeast Asian	Other Asian
Chinese	**1.66**	*1.21*	_	**-0.45***	**0.12**	**-0.10**	**1.26***	**-0.18**	**-0.11**
				(-.34)	**(.09)**	**(-.07)**	**(-.96)**	**(-.14)**	**(-.08)**
Filipino	**2.11**	*1.48*	*-0.27*	_	**0.57**	**0.35**	**-0.81**	**0.27**	**0.34**
			(-.21)		**(.44)**	**(.27)**	**(-.62)**	**(.21)**	**(.26)**
Japanese	**1.54**	*0.83*	*0.39*	*0.66*	_	**-0.22**	**-1.39***	**-0.30**	**-0.23**
			(.30)	*(.51)*		**(-.17)**	**(-1.05)**	**(-.23)**	**(-.18)**
Korean	**1.76**	*1.53*	*-0.32*	*-0.05*	*-0.70*	_	**-1.17***	**-0.08**	**-0.01**
			(-.25)	*(-.04)*	*(-.55)*		**(-.89)**	**(-.06)**	**(-.01)**
Samoan	**2.92**	*1.39*	*-0.18*	*0.09*	*-0.57*	*0.13*	_	**1.08***	**1.15***
			(-.14)	*(.07)*	*(-.44)*	*(.11)*		**(.82)**	**(.88)**
Southeast Asian	**1.84**	*1.43*	*-0.23*	*0.05*	*-0.61*	*0.10*	*-0.04*	_	**0.07**
			(-.17)	*(.04)*	*(-.47)*	*(.08)*	*(-.03)*		**(.05)**
Other Asian	**1.77**	*1.21*	*0.00*	*0.27*	*-0.38*	*0.32*	*0.18*	*0.22*	_
			(.00)	*(.21)*	*(-.30)*	*(.25)*	*(.14)*	*(.17)*	

[a] Trauma experiences categorized as “Witness” include a total of 6 possible items.

[b] Trauma experiences categorized as “Victim” include a total of 6 possible items.

[c] Effect size is the mean difference divided by root mean square error for the models.

*Indicates significant differences between ethnic groups adjusted for multiple comparisons ($p < .002$), using Bonferroni post hoc contrasts.

Table 6

Percentage of Students Reporting the Occurrence of Trauma Events by Type, Ethnicity, and Gender

Type of lifetime traumatic experience	Ethnicity								Gender	
	All Asian (*N*=1,661) (%)	Chinese (*n*=1,242) (%)	Filipino (*n*=187) (%)	Japanese (*n*=36) (%)	Korean (*n*=24) (%)	Samoan (*n*=27) (%)	SE Asian (*n*=100) (%)	Other Asian (*n*=45) (%)	Male (*n* =828) (%)	Female (*n*=833) (%)
Witness										
Death of loved one	45.3	43.1	60.5	38.9	37.5	74.1	42.9	40.9	41.7	48.9
Witnessed physical assault	41.7	41.6	40.5	33.3	50.0	59.3	41.8	40.9	46.8	36.7
Witnessed assault with weapon	2.9	2.8	1.6	0.0	8.3	14.8	4.1	0.0	3.5	2.2
Injury, sickness of loved one	47.7	44.9	60.5	50.0	54.2	74.1	50.0	45.5	49.3	46.1
Witnessed serious accident	22.4	21.3	26.5	2.8	20.8	44.4	26.5	29.5	24.2	20.6
Witnessed natural disaster	13.8	11.7	20.0	27.8	4.2	25.9	18.4	20.5	13.8	13.7
Victim										
Assaulted (e.g., slapped, hit)	36.0	36.3	33.5	19.4	41.7	29.6	43.9	36.4	44.7	27.5
Threatened with assault	19.8	19.4	23.8	0.0	29.2	14.8	25.5	18.2	25.6	14.2
Separated from caregiver	11.3	10.7	16.8	0.0	12.5	14.8	9.2	15.9	12.9	9.7
Serious illness, injury of self	27.2	25.0	36.8	33.3	37.5	37.0	28.6	29.5	30.7	23.7
Been in a serious accident	15.8	15.1	21.1	13.9	20.8	14.8	17.3	9.1	21.5	10.0
Attacked by animal	13.3	12.4	15.7	11.1	8.3	29.6	17.3	13.6	17.4	9.3
Other traumatic event	23.5	22.1	28.1	19.4	37.5	22.2	32.7	20.5	18.6	28.3

Table 7

Characteristics, Number of Traumatic Experiences, and PTS Scores of Students with Elevated Traumatic Stress[a]

Characteristic	Number (*n*=194) (12.7% of the sample of three ethnic groups)	Number of Trauma Experiences[c]			
		Witness[b] (Mean, SD)	Victim[c] (Mean, SD)	Total[d] (Mean, SD)	PTS *T*-Score[e] (Mean, SD)
All Asian	194 (100.0)	2.53 (1.26)	2.44 (1.42)	5.50 (2.25)	63.87 (5.63)
Gender					
Male	106 (54.6)	2.46 (1.24)	2.74 (1.44)*	5.54 (2.34)	64.19 (6.02)
Female	88 (45.4)	2.60 (1.28)	2.09 (1.32)	5.39 (2.16)	63.49 (5.13)
Ethnicity**					
Chinese	147 (75.8)	2.48 (1.24)	2.39 (1.39)	5.36 (2.19)	63.72 (5.74)
Filipino	29 (14.9)	2.62 (1.43)	2.41 (1.38)	5.55 (2.40)	65.14 (4.90)
Southeast Asian	18 (9.3)	2.72 (1.18)	2.94 (1.70)	6.22 (2.53)	63.06 (5.80)

[a] Students with elevated traumatic stress include those with self-reported PTS *T*-scores of 58 or greater.

[b] Trauma experiences categorized as "Witness" include a total of 6 possible items.

[c] Trauma experiences categorized as "Victim" include a total of 6 possible items.

[d]Trauma experiences categorized as "Total" include 13 possible items, including a general "other" item not categorized as witness or victim type.

[e] PTS *T*-Score = Post-Traumatic Stress *T*-Score from the *Trauma Symptom Checklist-Child Version (TSCC; Briere, 1996)*.

*$p<.05$ (comparison by gender)

**Ethnicity analyses are based on 194 students who were classified as Chinese, Filipino, or Southeast Asian. Data on students of other ethnicities who had elevated traumatic stress (*n*=10) are not included.

Table 8

Average Differences in Reported Total Number of Trauma Events and PTS T-Score by Ethnicity of Students in the Asian Sample who Reported Elevated Traumatic Stress[a]

	Adjusted Mean	Adjusted Mean	Average difference (effect size)[d] **Total trauma events** in upper diagonal and *PTS* in lower diagonal		
Ethnicity**	**Total Trauma Events**[b]	*PTS*[c]	Chinese	Filipino	Southeast Asian
Chinese	**5.46**	*63.89*	_	**-0.09** **(-.04)**	**-0.85** **(-.38)**
Filipino	**5.54**	*65.20*	*-1.31* *(-.24)*	_	**-0.76** **(-.34)**
Southeast Asian	**6.31**	*63.32*	*0.57* *(.10)*	*1.88* *(.34)*	_

[a] Students with elevated traumatic stress include those with self-reported PTS *T*-scores of 58 or greater.

[b] Trauma events categorized as "Total" include 13 possible items, including a general "other" item not categorized as witness or victim type.

[c] PTS = Post-Traumatic Stress Subscale *T*-Score from the *Trauma Symptom Checklist-Child Version (TSCC; Briere, 1996).*

[d] Effect size is the mean difference divided by root mean square error for the model.

*Indicates significant differences between ethnic/racial groups adjusted for multiple comparisons ($p < .016$), using Bonferroni post hoc contrasts.

**Ethnicity analyses are based on 194 students who were classified as Chinese, Filipino, or Southeast Asian. Data on students of other ethnicities who had elevated traumatic stress (n=10) are not included.

Table 9

Average Differences in Reported Number of Trauma Events as Witness and Victim by Ethnicity of Students in the Asian Sample who Reported Elevated Traumatic Stress[a]

	Adjusted Mean	Adjusted Mean	Average difference (effect size)[d] **Witness** in upper diagonal and *Victim* in lower diagonal		
Ethnicity	**Witness**[b]	*Victim*[c]	Chinese	Filipino	Southeast Asian
Chinese	**2.52**	*2.43*	_	**-0.11**	**-0.22**
				(-.09)	**(-.18)**
Filipino	**2.63**	*2.41*	*0.02*	_	**-0.11**
			(.01)		**(-.09)**
Southeast Asian	**2.74**	*2.99*	*-0.56*	*-0.58*	_
			(-.40)	*(-.41)*	

[a] Students with elevated traumatic stress include those with self-reported PTS *T*-scores of 58 or greater.

[b] Trauma experiences categorized as "Witness" include a total of 6 possible items.

[c] Trauma experiences categorized as "Victim" include a total of 6 possible items.

[d] Effect size is the mean difference divided by root mean square error for the model.

*Indicates significant differences between ethnic/racial groups adjusted for multiple comparisons ($p < .016$), using Bonferroni post hoc contrasts.

Table 10

Percentage of Students with Elevated Trauma with Lifetime Trauma Events by Type, Ethnicity, and Gender

	All Asian (*n*=194) (%)	Chinese (*n*=147) (%)	Filipino (*n*=29) (%)	SE Asian (*n*=18) (%)	Male (*n* =106) (%)	Female (*n*=88) (%)
Witness						
Death of loved one	52.1	49.7	69.0	44.4	44.3	61.4
Witnessed physical assault	68.0	70.7	55.2	66.7	71.7	63.6
Witnessed assault with weapon	5.7	6.1	0.0	11.1	4.7	6.8
Injury or sickness of loved one	66.5	65.3	75.9	61.1	67.0	66.3
Witnessed serious accident	36.6	35.4	41.1	38.9	34.9	38.6
Witnessed natural disaster	23.7	21.1	20.7	50.0	25.5	21.6
Victim						
Physically assaulted (e.g., slapped, hit)	67.5	67.3	69.0	66.7	70.8	63.6
Threatened with physical assault	50.0	48.3	44.8	72.2	52.8	46.6
Separated from caregiver	30.9	31.3	34.5	22.2	35.8	25.0
Serious illness, injury of self	41.8	38.1	51.7	55.6	45.3	37.5
Been in a serious accident	34.0	34.0	31.0	38.9	45.3	20.5
Attacked by animal	20.1	19.7	10.3	38.9	23.6	15.9
Other traumatic event	50.0	49.0	51.7	55.6	34.0	69.3

Table 11

Logistic Regression to Predict Reported Elevated Traumatic Stress from Occurrence of Trauma Events

Type of trauma event	Prediction of elevated traumatic stress		
Witness	Estimate	P	Odds
Death of loved one	0.17	.329	1.18
Witnessed physical assault	0.37	.053	1.44
Witnessed assault with weapon	0.14	.738	1.15
Injury or sickness of loved one	0.27	.144	1.31
Witnessed serious accident	0.24	.190	1.27
Witnessed natural disaster	0.26	.204	1.30
Victim			
Physically assaulted (e.g., slapped, hit)	0.76	<.001	2.14
Threatened with physical assault	1.01	<.001	2.74
Separated from caregiver	1.15	<.001	3.16
Serious illness or injury of self	0.30	.096	1.35
Been in a serious accident	0.50	.011	1.64
Attacked by animal	0.10	.661	1.10

Table 12

Logistic Regression to Predict Reported Elevated Traumatic Stress from Most Predictive Occurrences of Trauma Events

Type of trauma event	Prediction of elevated traumatic stress		
Victim	Estimate	P	Odds
Separated from caregiver (Separated)	1.39	.001	4.00
Threatened with physical assault (Threatened)	1.64	<.001	5.17
Physically assaulted (Assaulted)	1.28	<.001	3.60
Separated and Threatened	-0.21	.796	0.81
Separated and Assaulted	-0.12	.811	0.88
Threatened and Assaulted	-0.65	.113	0.52
Separated, Threatened, and Assaulted	0.29	.753	1.34