Resilience and psychological trauma among Filipino American women

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ABSTRACT

Aims: To explore the types of traumatic exposure, prevalence of posttraumatic stress disorder (PTSD), and level of resilience in a community sample of Filipino American women (FAW), as well as to investigate the relationships between their PTSD symptoms, history of traumatic exposure, and resilience.
Method: A cross-sectional study with a total of 188 adult FAW.
Results: We observed high levels of resilience and low levels of PTSD symptom severity. The most common form of traumatic exposure was non-interpersonal trauma occurring after the age of 18 years old. We also found a significant correlation between history of traumatic exposure and PTSD and between resilience and PTSD. Resilience was found to have a significant moderating effect on the relationship between traumatic exposure and PTSD.
Conclusions: The results provide preliminary evidence on the buffering and protective properties of FAW's resilience to PTSD despite traumatic exposure.

Background

Asian Americans, currently the fastest growing racial group in the United States (U.S. Census Bureau, 2018), are expected to become the largest U.S. immigrant group by 2055 (López, Bialik, & Radford, 2018). Around a fifth (19%) of this racial group are Filipinos—the third-largest, after the Chinese and Asian Indians, Asian group in the U.S. (Hoeffel, Rastogi, Kim, & Shahid, 2012; López, Ruiz, & Patten, 2017). With mere 67 Filipino males for every 100 Filipino females (Stoney & Batalova, 2013), women are the dominant gender in this population cohort.

An important construct that needs to be studied in Filipino American women (FAW) is resilience, defined as the "personal qualities that enable one to thrive in the face of adversity" (Connor & Davidson, 2003, p. 76). In the presence of factors that can exacerbate problems and stress responses, resilience functions as a protective personal resource that reduces the likelihood of negative outcomes (Masten, 2001). Importantly, FAW's experiences of trauma differ from those of other Asian American ethnic groups. Specifically, several studies demonstrated that, compared to other Asian American ethnicities, Filipino Americans have significantly higher correlations between posttraumatic stress experiences and poorer health (Kim et al., 2012; Klest,

Freyd, Hampson, & Dubanoski, 2013), as well as between posttraumatic stress disorder (PTSD) and racial discrimination (Li, 2014).

More generally, numerous empirical studies on resilience and its relationship to psychological trauma showed a strong negative correlation between severity of PTSD symptoms and resilience level (Reyes, Kearney, Lee, Isla, & Estrada, 2018; Siriwardhana, Ali, Roberts, & Stewart, 2014). However, very few of previous studies focused on Filipino American women (FAW). To bridge this gap in the literature, in the present study, we investigate the relationships between types of traumatic exposure, PTSD symptoms, and resilience among FAW.

Prevalence of PTSD

Several large-scale studies involving from over 14,000 to 34,000 Americans from four major racial groups (White, African, Hispanic, and Asian) consistently demonstrated that Asian Americans have the lowest prevalence of PTSD (e.g., Alegría et al., 2013; Asnaani, Richey, Dimaite, Hinton, & Hofmann, 2010; Beristianos, Maguen, Neylan, & Byers, 2016; Roberts, Gilman, Breslau, Breslau, & Koenen, 2011). Furthermore, even among individuals with the history of exposure to traumatic exposure, Asian Americans are least likely to develop PTSD as compared to other racial groups (Alegría et al., 2013; Roberts et al., 2011). While Filipino

Americans were rarely investigated separately from other Asian American groups, their PTSD rates were not found to significantly differ from those established for Native Hawaiians, Caucasians, African Americans, Chinese Americans, and Latinos (e.g., Klest, 2010; Pan, 2012; Whealin et al., 2015).

The aforementioned low prevalence of PTSD among Asian Americans, including Filipino Americans, has been interpreted to be related to the relatively higher socio-economic status of this population cohort (Roberts et al., 2011), as compared to that of other minority groups (DeNavas-Walt, Proctor, & Smith, 2013). Contrary to this interpretation, however, although Filipino Americans have the second-highest median family income and the lowest poverty rate among Asian Americans (López et al., 2017), they differ from other Asian Americans in having higher incidence rates of depression, as well as the highest prevalence of moderate to severe postpartum depression and the highest rate of substance use (Appel, Huang, Ai, & Lin, 2011; Huang, Wong, Ronzio, & Yu, 2007). Therefore, considering the scarcity of previous studies on psychological trauma and its consequences on FAW, in the present study, we explore the demographic variables influencing PTSD in this group.

Interpersonal and non-interpersonal traumatic exposure

In general, traumatic experiences are categorized into interpersonal trauma, i.e. experiences caused by a specific perpetrator, and non-interpersonal trauma, where a traumatic experience is caused by forces beyond human control, such as natural disasters (Freyd, 1996; see "Theoretical Background" for further discussion). These two types of trauma are also termed high-betrayal, medium-betrayal, and low-betrayal trauma (Freyd, 1996; see "Theoretical Background" for further detailed discussion). Overall, compared to other racial groups, Asian Americans are reported to have the lowest traumatic exposure to both interpersonal and non-interpersonal trauma (Alegría et al., 2013; Beristianos et al., 2016), the only exception being their more frequent exposure to political violence and war-related events (Alegría et al., 2013; Roberts et al., 2011).

More specifically, as concerns interpersonal traumatic exposure, Asian Americans have the lowest lifetime prevalence of experiencing intimate partner violence, i.e. violence involving physical and sexual abuse, stalking, and psychological aggression by a current or former intimate partner (Breiding, Chen, & Black, 2014). In addition, Asian Americans also have the lowest rates of history of child maltreatment (Beristianos et al., 2016; U.S. Department of Health, & Human Services, Administration for Children and Families, & Administration on Children, Youth and Families Children's Bureau, 2016). However, an interesting nuance here is that, among (relatively rare) individuals with such history, Asian Americans have the highest likelihood for suicidal ideation (Beristianos et al., 2016).

With regard to specifically Filipino Americans, in a study of over 800 Americans from different ethnic groups, Klest et al. (2013) found that, while Filipino Americans' mean scores in both high-betrayal and low-betrayal types of trauma were comparable to those of Latinos and Caucasians, Filipinos had the lowest prevalence of both interpersonal and non-interpersonal trauma among other Asian American groups (Li, 2016; Li & Anderson, 2016). Therefore, in the present study, we explore the frequency and types of traumatic exposure in a community sample of FAW, as well as investigate the relationship between FAW's history of traumatic exposure and their posttraumatic stress responses.

Resilience, traumatic exposure, and PTSD

Most of previous research on FAW's resilience has either combined both Filipino men and women in a sample (e.g., Kodama, 2015; Whealin et al., 2015), or considered American Filipinos together with other Asian ethnicities (e.g., Herbert, Leung, Pittman, Floto, & Afari, 2018).

For instance, in an integrative review about resilience of Asian American women, Reyes and Constantino (2016) reviewed a dearth of studies focused on FAW's resilience. Another study also suggested that FAW are generally more resilient that their male counterparts (Dial, 2007). Furthermore, Filipino Americans' resilience was reported to be negatively associated with ethnic identity-based experiences, meaning that the more they participate in such activities, the stronger is their ethnic identity, as they become more aware of racism, which lowers their resilience (Kodama, 2015). Additionally, resilience of foreign-born FAW was reported to be generally high and found to have protective properties against acculturative stress (Reyes, Serafica, Cross, Constantino, & Arenas, 2018).

Several previous studies suggested that resilience can serve as a protective factor against PTSD among Asian Americans with the history of traumatic experiences (Anderson & Bang, 2012; Herbert et al., 2018; Whealin et al., 2013, 2015). Yet, with regard to Filipino Americans, resilience of Filipino American military personnel was not found to be associated with a positive screen for PTSD, as it did for Filipino Americans' Pacific Islander and European-American counterparts (Whealin et al., 2013, 2015) In addition, unlike in European Americans, resilience in Filipino American military personnel was found significantly related to social support (Whealin et al., 2015).

In summary, the results of previous studies on trauma, posttraumatic stress, and resilience among FAW remain limited and inconsistent. In addition, many of these studies did not discriminate between various Asian ethnic groups (e.g., Filipinos, Chinese, Japanese, Koreans, and Vietnamese), which could have compromised current understanding of internal heterogeneity among Asian Americans (Museus & Truong, 2009). This has led to a failure to determine particular factors affecting trauma and resilience among Filipinos who have been living through a unique acculturation process (David & Nadal, 2013). The importance of investigating FAW's resilience to trauma is also underscored by available evidence on health disparities among FAW related to their mental health issues (Nadal, 2011; Napholz & Mo, 2010). To further this research, as well as to bridge the aforementioned gaps in the literature, the present study investigates the protective characteristic of FAW's resilience to PTSD. More specifically, we focus on the moderating effect of resilience on the relationship between traumatic exposure and PTSD.

Theoretical framework

The theoretical foundation of the present study includes several resilience models, such as Richardson's (2002) metatheory of resilience and Bonanno's (2004, 2012) trajectory of resilience model. Specifically, we adopt the proposition arising from these models that, despite significant psychological disruptions in life, such as traumatic events, adults can thrive and maintain their healthy functioning (Bonanno, 2004; Richardson, 2002). Rather than developing a severe psychopathology as a result of a traumatic event, a typical adult can develop, enhance, and enrich factors that protect him/her from negative consequences, such as higher degrees of posttraumatic stress symptomatology (Bonanno, 2004; Richardson, 2002). However, in the present study, we follow Bonanno (2004) in assuming that resilience is not the absence of PTSD symptoms, but rather is a "stable trajectory of healthy functioning across time, as well as the capacity for generative experiences and positive emotions" (p. 21).

Yet, in the present study, we aim to extend the above-mentioned resilience models through determining the impact of resilience on the relationship between traumatic exposure and PTSD among FAW. By investigating the moderating effect of resilience on the relationship between traumatic exposure and PTSD, we seek to determine the extent to which resilience can act as a protective factor against PTSD.

Due to our focus on types and frequency of traumatic exposure among FAW, another important part of the theoretical framework of the present study is Freyd's (1996) betrayal trauma theory. This theory

categorizes trauma experiences into three broad types—high betrayal, medium betrayal, and low betrayal—and explains which types of trauma are more distressing for the survivors. High-betrayal trauma refers to interpersonal traumatic events in which the perpetrator is very close to or intimate with the survivor (e.g., sexual assault by someone who is very close to the survivor). Medium-betrayal traumatic events are also interpersonal; however, in medium-betrayal traumatic experiences, the perpetrator is not close to the survivor (e.g., an acquaintance or stranger). Finally, low-betrayal traumatic experiences are non-interpersonal events (e.g., natural disasters, automobile accidents).

In Freyd's (1996) betrayal trauma theory, traumatic events caused by a perpetrator who is in close relationship with a survivor result in poorer mental health and psychological outcomes for the survivor, as compared to the outcomes when no such close relationship between the two parties was in place. Previous research demonstrated that "high-betrayal" trauma (i.e., interpersonal trauma caused by a perpetrator who has a close or intimate relationship with the survivor) has a significantly stronger association with high levels of psychological distress than non-interpersonal trauma (Freyd, Klest, & Allard, 2005; Goldsmith, Freyd, & DePrince, 2012). In addition, high-betrayal trauma was also reported to be a strong predictor of PTSD (Allard, 2009).

Accordingly, in the present study, we extend the betrayal trauma theory by determining the types of trauma common among FAW and by establishing how different types of trauma impact the severity of FAW's PTSD symptoms. While previous research on the impact of resilience on betrayal trauma was scarce, relevant studies showed the buffering effect of resilience on decreased PTSD symptom severity following childhood trauma (Afifi & MacMillan, 2011; Sexton, Hamilton, McGinnis, Rosenblum, & Muzik, 2015). Accordingly, in the present study, we also explore the moderating effect of resilience on the relationships between different types of trauma on PTSD symptom severity.

Aims of the present study

The present study has the following three aims: (1) to examine the frequency of three types of traumatic exposure (low-, medium-, and high-betrayal types of trauma), prevalence of PTSD, and level of resilience; (2) to determine the relationships between traumatic exposure, PTSD symptoms, and resilience; and (3) to explore the moderating effect of resilience on the relationship between frequency of traumatic exposure and PTSD symptom severity in a community sample of FAW.

Method

Participants

The sample size necessary for this study was calculated using a traditional power analysis with G*Power (Faul, Erdfelder, Buchner, & Lang, 2009). Assuming a moderate effect size ($f^2 = 0.15$), an alpha of 0.05, and given our intent to use a general linear model to conduct moderation analysis, we found that N of 146 would be sufficient to reach 80% power.

A total of 188 FAW participated in the present study. Eligibility criteria were the age of 18 years old or older, female gender, Filipino ethnic origin, and residence in the U.S. Filipino women who were not living in the U.S. (i.e., those visiting the country) were excluded from the sample. Most participants were aged 35–64 years old (55.9%), were employed full time (56.7%), were first generation U.S. immigrants (77.5%), had an income of $10,000–$75,000 (62.4%), and had at least a Bachelor's degree (65.1%). Table 1 presents a summary of the participants' demographic characteristics.

Table 1
Demographic characteristics of the participants ($N = 188$).

Value	N (%)[a]	Value	N (%)[a]	Value	N (%)[a]
Age		Income		Education	
18–24	23 (12.2)	< $10,000	22 (12.7)	No schooling completed	1 (0.5)
25–34	26 (13.8)	$10,000–$24,999	35 (20.2)	12th grade or less	4 (2.2)
35–54	55 (29.3)	$25,000–$49,999	46 (26.6)	HS or equivalent	17 (9.2)
55–64	50 (26.6)	$50,000–$74,999	27 (15.6)	Some college	25 (13.5)
65–74	23 (12.2)	$75,000–$99,999	19 (11.0)	Associate degree	14 (7.6)
75+	11 (5.9)	$100,000–$149,999	19 (11.0)	Bachelor's degree	98 (53.0)
		$150,000+	5 (2.9)	Master's degree	24 (13.0)
				Doctoral degree	2 (1.1)

Value	N (%)[a]	Value	N (%)[a]
Employment status		Generation	
Employed full time	101 (56.7)	1st generation	145 (77.5)
Employed part time	32 (18.0)	1.5 generation	14 (7.5)
Unemployed	10 (5.6)	2nd generation	19 (10.2)
Student	7 (3.9)	3rd generation	4 (2.1)
Homemaker	5 (2.8)	Other	5 (2.6)
Retired	23 (12.9)		

[a] Valid percent of those responding to the questions.

Measures

Frequency of types of traumatic exposure

The Brief Betrayal Trauma Survey (BBTS; Goldberg & Freyd, 2006) was used to determine the frequency of types of traumatic exposure. The BBTS consists of 14 items related to the three types of traumatic events discussed above: high betrayal, medium betrayal, and low betrayal (see "Theoretical Background" for further detail).

The BBTS asks if a traumatic event happened to the participant (a) before the age of 18 years old; (b) at the age of 18 years old or older; or (c) both before and at the age of 18 years old or older. The possible range of summed scale scores ranges from 0 to 36 for trauma exposure "before the age of 18 years old" and 0 to 36 for the exposure at "the age 18 years old or older." Test-retest reliability of the BBTS is 0.83 for childhood events and 0.75 for adulthood events (Goldberg & Freyd, 2006). The BBTS also includes the *More About Your Personal Experiences* (MPE) questionnaire that asks the participants to specify the gender of the perpetrator and the type of his/her relationship with the participant (e.g., parent, husband, etc.).

Posttraumatic stress disorder (PTSD) symptoms

The PTSD Checklist for DSM-5 (PCL-5; Weathers et al., 2013) was used to measure the prevalence and severity of PTSD symptoms. The PCL-5 is a 20-item scale that measures the frequency and severity of PTSD symptoms. The items are scored on a 5-point Likert scale. The total symptom score, calculated as a sum of scores on all items, ranges from 0 to 80, and higher scores indicate more severe PTSD symptoms. The PCL-5 has a strong internal consistency ($\alpha = 0.94$) and test-retest reliability ($r = 0.82$), as well as a high convergent ($r_s = 0.74$ to 0.85) and discriminant ($r_s = 0.31$ to 0.60) validity (Blevins, Weathers, Davis, Witte, & Domino, 2015).

We determined the participants with PTSD using DSM-5 criteria for PTSD (American Psychiatric Association [APA], 2013). To this end, the following three criteria were used: (1) reports of lifetime exposure to traumatic events through the BBTS (Goldberg & Freyd, 2006); (2) required number of symptoms in each PTSD symptom cluster, such as at least one intrusion symptom, one avoidance symptom, two symptoms of negative alterations in cognitions and mood, and two symptoms of alterations in arousal and reactivity (APA, 2013) through the PCL-5;

and (3) a total PCL-5 score of 33 or higher, as 33 is the cut-point score for a provisional diagnosis of PTSD (Weathers et al., 2013). The mean PCL-5 score for the participants positive for PTSD ($n = 27$) was 46.1 (SD = 10.38).

Resilience

The Connor-Davidson Resilience Scale 10 (CD-RISC-10; Campbell-Sills & Stein, 2007) was used to measure psychological resilience. The CD-RISC-10 consists of 10 items rated on a 5-point Likert scale (0 = "not true at all", 4 = "true nearly all the time"). The total score ranges from 0 to 40, with higher total scores indicating a greater resilience. Campbell-Sills and Stein (2007) reported internal consistency of 0.85, and their analysis demonstrated good construct validity and reliability.

Recruitment, procedure, and data analyses

Ethics approval to conduct this study was obtained from the Institutional Review Board of the University of Nevada, Las Vegas (UNLV). The participants were recruited through public events conducted by local Filipino religious, social, and cultural organizations in the greater Las Vegas area. Recruitment locations were community centers, parks, churches, and shopping centers. Prospective participants were provided advertisement flyers about the study, and the PI and/or research team members were physically available for further information and questions. Interested participants were provided with an informed consent form that they were asked to sign prior to completing the survey questionnaire. The participants were provided with a quiet, comfortable space to complete the survey questionnaire. All completed questionnaires were anonymized.

The scores on the PCL-5, CD-RISC-10, and BBTS instruments were calculated prior to analysis to allow for statistical summarization and evaluation. Following the guidelines suggested in the BBTS (Freyd & Goldberg, 2004; Goldberg & Freyd, 2006), the following betrayal categories were discerned: "trauma with low betrayal", "trauma with medium betrayal", and "trauma with high betrayal" for both age < 18 years old and age > 18 year old surveys. The values obtained for the categorical variables of age, employment, generation, income, and education were computed, and general frequencies and score statistics were calculated for each of these demographic categories. Additionally, total score statistics and overall Cronbach's alpha reliability measures were calculated for each instrument.

Considering that the participants could report multiple categories of betrayal, in the remainder of this section, separate models using these data are reported to alleviate model dependencies. In addition to these instruments, responses to the MPE questionnaire were scored and are reported by gender and relationship of the perpetrator to the respondent.

In order to test significant differences in scores for the scale instruments and to construct moderation models, inferential statistical models were used. The data were tested for distributional assumptions and found to meet the normality assumptions of the tests reported herein. However, in the results, we also report Spearman-rank correlations that provide more conservative correlation estimates, though these correlations mirrored Pearson-based significance inferences. Demographic differences in the scores for each instrument were tested with ANOVA. To evaluate the potential moderating effect of resilience on the relationship between traumatic exposure and PTSD symptoms, we used moderation models (Hayes, 2018). All statistical analyses were conducted using SPSS (v. 25; IBM SPSS, Armonk, NY), and the moderation models were developed using the PROCESS (v. 3) macro of Hayes (2012).

Table 2
Occurrence of different types of trauma.

Types of traumatic exposure	No N (%)	Yes N (%)
Before age 18 years old		
Low-betrayal trauma	62 (45.9)	73 (54.1)
Medium-betrayal trauma	86 (67.2)	42 (32.8)
High-betrayal trauma	92 (73.0)	34 (27.0)
At age 18 years old and/or older		
Low-betrayal trauma	47 (29.9)	110 (70.1)
Medium-betrayal trauma	81 (51.9)	75 (48.1)
High-betrayal trauma	97 (61.8)	60 (38.2)

Results

Scale scores

Frequency of types of traumatic exposure (BBTS)

Mean scores on the BBTS indicate the frequency of three types of traumatic events (high-, medium-, and low-betrayal trauma) experienced in two time periods – before the age of 18 years old and at the age of 18 years old and older. Mean BBTS score for traumatic events before age 18 years old was 2.3 (SD = 3.13; range 0.5–5.7). Mean BBTS score for traumatic events at age 18 years old and/or older was 3.3 (SD = 3.42; range 2.0–6.0). Reliability of each section of the BBTS (i.e., < 18 years old and > 18 years old) was high ($\alpha = 0.809$ and $\alpha = 0.790$, respectively).

Table 2 reports the number of the participants with high-, medium-, and low-betrayal trauma according to the aforementioned two age categories. As can be seen in Table 2, proportionally more respondents reported trauma occurring after the age of 18 years old for low-betrayal ($\chi^2 = 7.26$, $p < 0.001$), medium-betrayal ($\chi^2 = 6.15$, $p = 0.007$), but not for high-betrayal trauma ($\chi^2 = 3.46$, $p = 0.062$). In addition, 61 respondents reported trauma both before and after the age of 18 years old.

The last section of the BBTS, called the *More About Your Personal Experiences* (MPE), explored the participants' traumatic experiences involving sexual assault, physical assault, and psychological and emotional abuse. The MPE also asks about the perpetrator's gender and the type of relationship between him/her and the survivor. The results of the MPE revealed that the overwhelming majority of perpetrators (over four times more common) were men. The most frequent perpetrators in trauma experiences were romantic partners, followed by other family members and friends/acquaintances. Interestingly, few respondents reported trauma caused by professionals (e.g., doctors, coaches, etc.), and none reported a babysitter or nanny as a perpetrator in the trauma/betrayal relationship.

PTSD symptoms (PCL-5)

The overall mean score on the PTSD symptom severity (PCL-5) was 19.1 (SD = 14.97) for all participants, and had a high reliability ($\alpha = 0.954$). The PCL-5 scores ranged from a low of 0 to a high of 76.

Tables 3 reports the statistical results of demographic comparisons between the participants with and without PTSD (N = 27 and N = 161,

Table 3
Demographic comparisons between PTSD and non-PTSD groups.

Demographic variable	Likelihood ratio	*p*-Value	Effect size
Age	5.44	0.364	0.173
Employment status	4.44	0.728	0.155
Generational status	7.16	0.209	0.245
Income	10.77	0.096	0.105
Education	16.53	0.021*	0.328

* $p < 0.05$.

respectively). Education was the only demographic characteristic for which statistical significance was found, with PTSD-negative respondents generally having a higher education attainment. Owing to the small expected cell counts in some cases, the likelihood ratio test results are provided along with Cramer's V coefficient of effect size; due to disparate sample sizes between the groups, the results should be interpreted with caution.

Resilience (CD-RISC)

The overall mean score on the level of resilience (CD-RISC) across all study participants was 30.1 (SD = 7.54), and reliability was high (α = 0.924). Mean scores on this instrument ranged from a low of 15 to a high of 34.5. The CD-RISC mean score was 28.73 (SD = 6.85) for the PTSD-positive group and 30.80 (SD = 7.64) for the PTSD-negative group. No significant difference between the two groups in resilience levels was observed.

Correlation between resilience, PTSD symptoms, and traumatic exposure

In general, correlations among the scales were significant. PTSD symptom severity was significantly negatively correlated with the resilience ($r_s = -0.288$, $p < 0.001$) and significantly positively correlated with frequency of traumatic exposure both before and after the age of 18 years old ($r_s = 297$, $p < 0.001$ and $r_s = 0.330$, $p < 0.001$, respectively). PTSD also positively correlated with the frequency of low-betrayal types of trauma before and after the age of 18 years old ($r_s = 0.295$, $p = 0.001$ and $r_s = -0.288$, $p < 0.001$, respectively), with the medium-betrayal trauma after the age of 18 years old ($rs = 188$, $p = 0.019$), and with high-betrayal trauma before and after the age 18 of years old ($r_s = 0.391$, $p < 0.001$ and $r_s = 0.302$, $p < 0.001$, respectively). Conversely, resilience did not significantly correlate with the frequency of traumatic exposure.

Moderation model

A moderation model was constructed to investigate the potential moderating effect of resilience on the relationship between frequency of traumatic exposure and PTSD symptom severity (Fig. 1). Due to potential model dependencies arising from non-independence of respondents (i.e., some participants reported multiple types of trauma), we developed separate models to investigate moderation (see Table 4). Significant moderation was detected for the frequency of traumatic exposure (i.e., the BBTS total score) in the respondents who experienced trauma in adulthood. The conditional moderating effect of this predictor was significant when the resilience score was equal to or above 23. The models were constructed following Hayes (2018) and using the PROCESS software.

Table 4
Results of moderation analyses.

Model	X (trauma)	M (resilience)	X * M
BBTS total score < 18 years	1.10	−0.45	0.01
	$p = 0.369$	$p = 0.369$	$p = 0.747$
BBTS LB < 18 years	−0.33	−0.57	0.22
	$p = 0.973$	$p = 0.220$	$p = 0.510$
BBTS MB < 18 years	11.37	−0.46	−0.20
	$p = 0.339$	$p = 0.037$	$p = 0.595$
BBTS HB < 18 years	17.83	−0.39	0.20
	$p = 0.121$	$p = 0.070$	$p = 0.59$
BBTS total score ≥ 18 years	−1.29	−0.79	0.10
	$p = 0.327$	$p < 0.001$	$p = 0.021$
BBTS LB ≥ 18 years	−11.44	−0.87	0.558
	$p = 0.285$	$p = 0.004$	$p = 0.115$
BBTS MB ≥ 18 years	−8.40	−0.64	0.39
	$p = 0.410$	$p = 0.017$	$p = 0.239$
BBTS HB ≥ 18 years	4.18	−0.46	0.120
	$p = 0.665$	$p = 0.032$	$p = 0.706$

Note. The table reports the results of moderation analyses (see Fig. 1). Regression coefficients and *p*-values are provided. The outcome variable in each model was the PCL-5 score for PTSD.
BBTS (Brief Betrayal Trauma Survey); LB (low-betrayal); MB (medium-betrayal); HB (high-betrayal).

Discussion

Types of traumatic exposure

The most frequent type of trauma in our FAW sample was non-interpersonal trauma occurring during adulthood, rather than interpersonal trauma occurring during childhood. This result is consistent with the findings of several previous studies showing that, as compared to women in other racial groups, Asian American women have a lower prevalence of exposure to close interpersonal traumas (Breiding et al., 2014; Roberts et al., 2011). However, our results do not align well with other studies on Asian Americans that reported a higher prevalence of high-betrayal trauma occurring in childhood (Allard, 2009; Hahm, Kolaczyk, Lee, Jang, & Ng, 2012; Klest, 2010; Nguyen, 2014). In this respect, it is important to note that, according to the betrayal trauma theory (Freyd, 1996), high-betrayal trauma should not necessarily occur during childhood.

Furthermore, our results showed that for those FAW who did report interpersonal trauma experience, major perpetrators were men—predominantly, FAW's romantic or intimate partners. This suggests that, despite the relatively low prevalence of interpersonal trauma among FAW, intimate partner violence among FAW does exist. While, in general, Asian Americans have lower rates of intimate partner violence as compared to the general U.S. population (Chang, Shen, & Takeuchi, 2009), this low prevalence rate may be skewed by Asian American
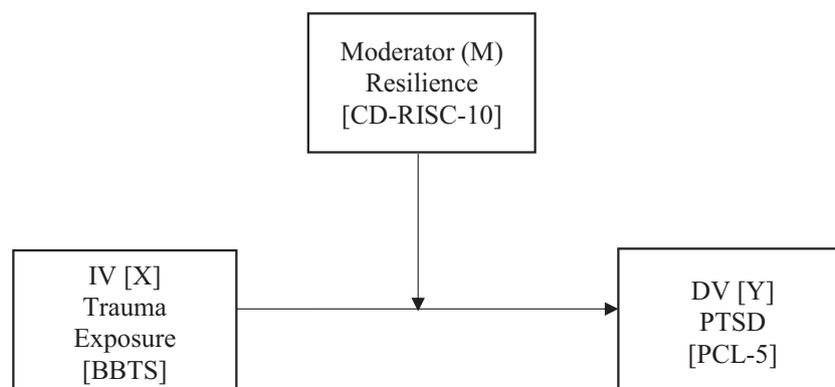

Fig. 1. Moderation model relating an independent variable (X) to a dependent variable (Y) with a moderator (M) (Hayes, 2018).

women's unwillingness to disclose this type of abuse (Magnussen et al., 2011). Cultural factors, such as the tendency to avoid public shame rooted in their Filipino collectivistic culture (Lauber & Rössler, 2007; Sanchez & Gaw, 2007), could have influenced FAW's unwillingness to disclose abuse in intimate relationships. Indeed, previous research has consistently demonstrated that Filipino women prioritize their roles as mothers and wives over their personal wellbeing and tend to be tolerant and self-controlled in negotiating problems with their husbands or partners (Crisostomo, Cruz, Cruz, & Cruz, 2012; Estrellado & Loh, 2014). In addition, most FAW in the present study were first-generation immigrants, suggesting that their cultural Filipino values might have remained unchanged by cultural assimilation processes typically observed in second- and further-generation immigrants (Christmas & Barker, 2014; Rothe, Tzuang, & Pumariega, 2010). Therefore, further research is needed to explore interpersonal trauma and posttraumatic stress among FAW, particularly how cultural factors affect the relationship between traumatic exposure and PTSD.

PTSD

Overall, the mean PTSD symptom severity in our sample was rather low (19.1), which is below the cut-point score for screening community samples (Weathers et al., 2013), and only 14% of our participants had a provisional diagnosis of PTSD. These results are well aligned with previous findings on Asian American women's low levels of PTSD symptom severity (Farley, Minkoff, & Barkan, 2001; Roberts et al., 2011) and lower prevalence of PTSD in Asian Americans, more generally (Alegría et al., 2013; Asnaani et al., 2010; Koo, Nguyen, Gilmore, Blayney, & Kaysen, 2014).

However, although the overall PTSD symptom severity was rather low, we found significant positive relationships between the level of traumatic exposure (low-, medium-, and high-betrayal), on the one hand, and PTSD symptom severity, on the other hand. Here, a greater magnitude effect was observed between a high-betrayal trauma before the age of 18 years and PTSD symptom severity. This finding is consistent with Freyd's (1996) betrayal trauma theory according to which social relationships in traumatic events account for a broad range of posttraumatic stress symptoms. For instance, previous studies demonstrated significant correlations between high-betrayal traumas and poorer mental health outcomes, including PTSD symptoms (Allard, 2009; DePrince & Freyd, 2002; Freyd et al., 2005; Tang & Freyd, 2012). Likewise, Klest et al. (2013) found that high-betrayal trauma was a significant predictor of poorer health among Filipino Americans and Native Hawaiians. Hence, our results provide a robust and detailed support for the betrayal trauma theory, confirming that high-betrayal trauma results in increased severity of PTSD symptoms.

In addition, our results extend the betrayal trauma theory. According to this theory, a higher prevalence of high-betrayal trauma in childhood is associated with stronger negative mental health outcomes, including posttraumatic stress and depressive symptoms in adulthood (see Goldsmith et al., 2012; Martin, Cromer, DePrince, & Freyd, 2013; Tang & Freyd, 2012 for empirical support to this expectation). Conversely, the betrayal trauma theory predicts that lower incidence rates of high-betrayal types of trauma in childhood would be associated with less severe posttraumatic stress symptoms in adulthood. This expectation is fully supported by our results on the lower prevalence and degree of PTSD and lower rates of high-betrayal types of trauma. However, our results should be interpreted with caution, as the severity of posttraumatic stress symptoms can also be influenced by other variables (not only the type of traumatic exposure; see Gagnon, Lee, & DePrince, 2017). Therefore, in the present study, we explored the moderating effect of resilience on traumatic exposure and PTSD.

Finally, our results demonstrate an interesting relationship between PTSD and demographic variables. Specifically, we found that education was significantly negatively associated with PTSD. This result is fully congruent with previous studies showing that a lower education level is

associated with more severe PTSD symptoms (Dekel, Mandl, & Solomon, 2011; Heath et al., 2013; Scott, 2007). Also, in compliance with general statistics showing that Asians tend to be more educated than other major racial groups in the U.S. (National Center for Education Statistics, 2018), 65% of participants in our sample had a Bachelor's degree. Considering this bias in our sample, in future research, it would be necessary to explore the relationship between traumatic experiences and severity of PTSD among FAW women with lower educational levels.

Resilience and trauma

In general, the participants of the present study had moderate to high levels of resilience, and these levels exceeded those typically reported for female populations (Hébert, Parent, Simard, & Laverdière, 2018; Scali et al., 2012; Vitale, 2015). Our results on FAW's resilience are consistent with Dial's (2007) finding that FAW had higher resilience scores than their male counterparts and with Hamid's (2007) report that Asian American women have a higher level of resilience than their male counterparts. The high level of resilience among FAW in our results could be attributed to what Ferrera (2017) defined as Filipinos' *cultural portals*, i.e. points of access to the Filipino culture. According to Ferrera (2017), these portals serve as sources for enhancing Filipinos' resilience. Furthermore, considering that many Filipino Americans are used to dealing with economic hardship, Filipino cultural practices are generally considered to be able to provide this ethnic group with effective coping mechanisms (e.g., Tintiangco-Cubales, 2013).

Based on our findings on the significant negative relationship between FAW's resilience and PTSD and the moderating effect of resilience on the relationship between traumatic exposure and PTSD, all of which are consistent with previous reports targeting Chinese women (Liu et al., 2015) and adult Asian Americans (Whealin et al., 2013, 2015), we can conclude that resilience indeed functions as a protective factor against PTSD. The protective characteristic of resilience can be traced back to Richardson's (2002) metatheory of resilience, according to which, despite significant psychological disruptions in life experiences, individuals with high levels of resilience are still able to reintegrate back to a new homeostasis. Our findings also corroborate Bonanno's (2004, 2012) theoretical model of resilience where resilience is viewed as a trajectory or pattern of healthy functioning after a traumatic exposure, rather than the absence of pathology (such as PTSD). Hence, the conditional moderating effect of resilience (i.e., only when resilience score was 23 or higher) on the relationship between traumatic exposure and PTSD indicates that resilience is not a stable personality trait, but rather a process involving constant adaptive coping towards a trajectory of healthy psychological and physiological functioning (Bonanno, 2004, 2012).

Contributions and practical implications

Taken together, our results contribute to the body of literature on trauma among Asian Americans by focusing specifically on the relationship between trauma and resilience among FAW. Our study underscores the significance of FAW's resilience to PTSD symptom severity. Another contribution of our study is that it focuses on FAW. As mentioned above, many trauma studies aggregate different Asian ethnic groups (such as Filipinos, Koreans, Vietnamese, Chinese, etc.) into one racial group, thereby overlooking the heterogeneity within this population. Yet, as a result of the Philippines' colonial history, Filipino Americans have undergone a unique acculturation process, which makes them markedly different from other Asian Americans (David & Nadal, 2013; Nadal, 2011).

Deriving from the complex relationship between resilience and psychological trauma among FAW highlighted in the present study, the practical insight of our results is that nursing professionals should facilitate the development of resilience among ethnic minority

populations, such as Asian American women. Moving forward with life despite traumatic experiences can be difficult, and mental health nurses can help their clients promote resilience through acceptance and re-appraisal of difficult experiences (Fitzpatrick, 2013). Promoting resilience is particularly important among Asian Americans, as many of them stigmatize mental illness and reluctantly disclose their mental health problems, resulting in low rates of mental health help-seeking behaviors (Augsberger, Yeung, Dougher, & Hahm, 2015; Han & Pong, 2015; Sanchez & Gaw, 2007). This complex impact of social factors on the recovery and wellbeing of minority women makes it imperative for nurses to promote resilience as a matter of self-development, rather than as merely a trivial psychological strategy (Prosser, Metzger, & Gulbransen, 2017).

Finally, deriving from our assumption that cultural factors (such as collectivistic values, preservation of family integrity, and women's prioritization of domestic responsibilities as wives and mothers over personal wellbeing) could have influenced our results, another practical insight of our findings is that psychiatric/mental health nursing professionals should be provided with adequate culturally competent training that would help them effectively provide trauma-informed care for ethnic minority women such as FAW. In future research, using an ecological model of resilience as a theoretical foundation to explore broader factors (i.e., social and cultural factors) affecting resilience from traumatic events may also be needed.

Limitations

The present study has several limitations. First, the convenience sampling method we used in the present study may compromise re-presentativeness of our sample and generalizability of the results. Therefore, our findings should be considered to be preliminary. Although the number of participants exceeded the one calculated in the power analysis, the data were collected based on a convenience sample, so generalizability of the results should be also inferred with that caveat. This being said, our results provide foundational evidence on the relationship between trauma and resilience among FAW.

A second limitation of the present study is that, in our samples, there was a quantitative imbalance between a small number of participants with PTSD and a relatively larger number of those who were not screened "positive" for PTSD. Hence, along with Cramer's V coefficient of effect size in the "Results" section, we also presented the likelihood ratio test results. Despite this limitation, to the best our knowledge, our study is among the first to focus on female Filipino Americans' traumatic experiences, posttraumatic stress responses, and resilience without aggregating this cohort into a larger racial group of Asian Americans, or without combining them with male Filipinos.

A third limitation of our study is that our participants could have underreported high-betrayal types of trauma and PTSD symptom severity. Due to cultural Filipino values, such as "saving face" (Gong, Gage, & Tacata, 2003), which results in Asian American women's un-willingness to disclose abuse (Magnussen et al., 2011), our respondents might have been reluctant to openly discuss their past traumatic experiences. Although the survey was anonymous, a greater privacy and larger incentives are not necessarily associated with a greater disclosure of potentially sensitive information, such as history of sexual abuse (Murdoch et al., 2014). Therefore, in further research, it would be necessary to combine quantitative approaches (of the type used in the present study) with qualitative methodologies. This methodological triangulation will in all probability increase the likelihood of respondents' disclosing sensitive information and, therefore, result in more robust findings.

Conclusions

The present study evaluated the prevalence of traumatic exposure, PTSD, and resilience among FAW and determined the relationships

between these variables. By providing evidence on the types of traumatic events among FAW, and how their traumatic exposure impacts their posttraumatic experiences, our results extend the betrayal trauma theory. Our findings also confirm the theoretical models of resilience, demonstrating that resilience indeed has protective properties against the development of PTSD. Our results, particularly our finding on the conditional moderating effect of resilience in the relationship between traumatic exposure and PTSD, suggest that it is imperative to promote and enhance FAW's resilience. Future studies on traumatic experiences among FAW should prioritize determining relevant strategies and interventions promoting the development of resilience in this cohort, as well as integrate cultural sensitivity into such policies. Accordingly, the next investigatory steps towards helping FAW—and Asian American in general—should involve applying an ecological model of resilience as a theoretical basis, using mixed-method design to explore particular norms, beliefs, and practices affecting FAW's disclosure practices and help-seeking behaviors, and conducting feasibility studies to test particular interventions that promote resilience.

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Declaration of competing interest

No conflict of interest has been declared by the authors.

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