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Commentary: Factors Related to the Probable PTSD After the 9/11 World Trade Center Attack Among Asian Americans

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The study titled "Factors Related to the Probable PTSD after the 9/11 World Trade Center Attack among Asian Americans," published in the Journal of Urban Health in 2018[1], examined the prevalence of probable post traumatic stress disorder (PTSD) as well as its associated factors among Asian Americans (Asians) 2-3 years after the World Trade Center (WTC) attack and compared them against the non-Hispanic White group (Whites). The dataset from The WTC Health Registry, the largest sample recruited among all reported studies related to the disaster, was used with samples of 4,721 Asians and 42,862 Whites. The main finding of the study was that Asians had significantly higher PTSD than Whites (14.6% vs. 11.7%, $p<0.0001$). Furthermore, some race-specific factors were found to be significantly associated with PTSD; namely, for Whites, higher education and being employed were protective factors against the disorder, while being an immigrant was a risk factor; but none of the three factors showed significant associations among Asians. However, some universal factors across races were also found: Income was a protective factor against PTSD, and higher direct exposure to the disaster and the presence of Lower Respiratory Symptoms (LRS) were risk factors for PTSD in both races. Of particular interest in relation to lung health and diseases is the association between LRS and PTSD. In this commentary, the background and rationale for examining the association between PTSD and LRS for Asians and comparing against Whites will be elaborated, followed by a more detailed report of the findings and their interpretation and implications.

The research team's interest in considering LRS as one of the predictors of PTSD was mainly spurred by the increasing reports of the co-occurrence of these two illnesses, especially in relation to the WTC attack[2-7]. This comorbidity could be due to similar risk factors for both illnesses at the disaster, especially in relation to overwhelming dust exposure. Furthermore, there seemed to be a reciprocal association of the physiological dysregulation of PTSD on the respiratory functions[8]. It was also noted that individuals with PTSD tended to have higher vulnerability to experience and to report somatic symptoms[9], thus, a significant association between the two disorders was hypothesized.

Culture influences how mental health issues are experienced by shaping symptom manifestations and their interpretation when faced with trauma[10]. In Asian culture, there is a tendency to perceive psychological distress as a result of malingering bad thoughts, lack of willpower, and character weakness[11, 12] which leads to a heightened stigma around mental illness[13]. Asians were also found to have the

inclination to embody experiences of psychological distress by emphasizing the somatic expression of psychological difficulties which is more socially acceptable[14]. In the original study, it was hypothesized that this would result in a stronger relationship between PTSD and LRS in Asians. However, Asians' tendency to embody experiences of psychological distress and the social acceptability of somatic expression of psychological distress may lead to not only their overreporting of physical symptoms in terms of perceived respiratory illness but also underreporting of mental health symptoms in their psychological form. This may, in turn, weaken the association between physiological issues and mental health issues among Asians compared to Whites. Thus the original hypothesis that the relationship between PTSD and LRS would be stronger among Asians than Whites was misguided.

Although PTSD is mainly a mental disorder, its diagnostic criteria also include some somatic symptomatology such as sleep disturbance and heart pounding, which further complicates the relationship between physical and mental health problems[15]. Nonetheless, it is worthwhile to examine the association between somatic and psychological distresses in order to better comprehend the value of using physical health problems as an entry point to address mental health issues. This is especially important for Asians as it may provide a way to circumvent their avoidance to seek mental health service due to severe stigma[16]. Thus comparison across race was made to reflect on the extent to which culture may impact the association between psychological and physical distress.

In the WTC Health Registry, LRS was identified as being positive if respondents reported new or worsening symptoms for one of the following: shortness of breath, persistent coughing, or wheezing since the WTC attack up to the point of the interview, which was 2-3 years after the attack. PTSD was assessed by the 17-item PTSD Checklist (PCL), specifically worded to address the 9/11 event. The prevalence of LRS and PTSD and the adjusted odds ratio (aOR) of LRS for PTSD were examined, taking into account other pertinent factors such as socioeconomic status, direct disaster exposure, etc., and compared between the races. Racial differences within the PCL on items that pertained to physical reactions such as heart pounding, trouble breathing and sweating when reminded of the disaster, and sleep disturbance as indicators of somatic manifestations of PTSD were also tested.

As the study indicated, there was no racial difference in the prevalence of LRS (51.7% in Asians vs. 51.9% in Whites), but Asians had a higher proportion of having PTSD. What was most striking was that among all the factors entered into the separate models for each race, having LRS showed the greatest odds for PTSD for both races (aOR=3.55, [a]CI=2.86-4.41 for Asians; aOR=3.86, CI=3.56-4.19 for Whites). However, no significant racial difference was detected. For somatic manifestations within the PCL, a higher proportion of Asians had physical symptoms such as heart pounding and trouble breathing when reminded of the disaster compared to Whites (18.3% vs. 13.3%, respectively, $p<0.0001$). For sleep disturbance, Asians' higher proportion vs. Whites was marginal (28.8% vs. 27.5% respectively).

The hypothesized association of LRS and PTSD was reaffirmed in this study as was reported in many studies of the WTC attack[17, 18]. The fact that it had the strongest association for both races among all other predictors was remarkable — those having LRS were 3.6 times more likely to have PTSD for Asians and 3.9 times for Whites. However, the non-significant racial difference was unexpected. As mentioned earlier, it seems that Asians did have a greater general tendency to report physiological symptoms than Whites. In fact, in a study on comorbidity that also used data from the WTC Health Registry, Asians who had PTSD showed more than three times the odds of reporting diabetes when compared to the White group[19].

One possible explanation of the non-significant racial difference in this study is the mutually reinforcing nature of LRS and PTSD[18]. LRS could be a result of a compromised immune system resulting from PTSD, while LRS could also serve as a reminder of the traumatic experience, thereby engendering anxiety and stimulated PTSD symptoms, resulting in an intensification of both illnesses[18]. Such mutual reinforcement of the physical and mental disorders could thus outweigh the effect of Asian culture's tendency to focus on their somatic expression of distress and to downplay their psychological distress to avoid its stigma. As discussed earlier, the comorbidity could also be due to similar exposure to risk factors for both illnesses at the WTC attack[8], and the increased vulnerability of individuals with PTSD to experience and report somatic symptoms[9], which may not be race-related.

In the original study some of the limitations were acknowledged which could affect the manifestation of PTSD, including the lack of information on study participants' social support, service use, and post 9/11 trauma or stress. However, coping beliefs and behaviors such as spiritual or religious beliefs and practices were also not addressed which could have an impact on mental health outcome.

Although there was no racial difference in the association between LRS and PTSD, the heightened risk of PTSD by over 3-4 times for both races when LRS is present does call for conscientious efforts to screen for one disorder when the other is being discovered so as to ensure that needed help, whether physiological or mental, is not overlooked. It is particularly important for Asians that potential mental health issues are screened for when respiratory or other

somatic symptoms such as heart pounding, sweating, or sleep disturbance are noted during medical doctor's visits, especially around a disaster of similar nature as the WTC, as such symptoms could become an inroad to discover potential PTSD. This need is further reinforced by the findings of another study of the research team on the WTC attack that Asians' mental health service use was significantly increased by having routine medical check-up[20]. Given Asian American's tendency to seek help for physical ailments[21], and the persistent and serious underutilization of mental health services[22], an effective "bridge" between medical and psychiatric services is of great importance[23].

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Conflict of Interest

There is no conflict of interest for all the authors and any outside parties.

Note:

[a]CI = Confidence Interval

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