

## PARENTAL REACTIONS AND POSTTRAUMATIC SYMPTOMS IN ASIAN SURVIVORS OF THE APRIL 16<sup>TH</sup> SHOOTING AT VIRGINIA TECH

*Kaushalendra Amatya, Russell T. Jones, Ph.D., and Michael Hughes, Ph.D.  
Virginia Polytechnic Institute and State University*

### Abstract

The negative impacts of mass shootings on mental health have been documented within the general trauma literature. Substantial research has also shown the Asian population to be a minority group especially vulnerable to negative psychological outcomes following trauma and stress. Parental behaviors have been found to have substantial impact on mental health among college students. The relationship between parental reactions and psychological outcomes following mass shootings in the Asian population, however, has not been studied adequately. The purpose of this study was to examine perceived threat during traumatic events and four different parental reactions as predictors of posttraumatic stress, and each of the parental reactions as a moderator of the relationship between perceived threat and posttraumatic stress. Results indicate that higher levels of perceived threat and all four parental reactions predicted higher levels of posttraumatic stress. Parental reactions did not significantly moderate the relationship between perceived threat and posttraumatic stress. Clinical implications of these findings regarding mental health among Asians and college students are discussed.

---

### Acknowledgements

Major funding for this study was provided by an unrestricted grant from the Jed Foundation. Additional funding was provided through funding from the U.S. Department of Education, Office of Safe and Drug Free Schools. The funding agency had no role in the design and conduct of the study, in the collection, analysis, and interpretation of the data, or in the preparation review, or approval of the manuscript.

### About the authors

***Kaushal Amatya** is a doctoral student in Clinical Psychology working under Dr. Russell T. Jones at Virginia Tech. He received his MS from Virginia Tech and his BS from Texas Christian University. His clinical interests include traumatic stress and outcomes in children and young adults, phobias in children, influence of parenting practices in the development, course, and treatment of anxiety disorders, and cultural factors influencing mental health outcomes. Kaushal completed his externship at Children's Research Triangle in Chicago, IL and continues his clinical work at Psychological Services Center and Child Study Center at VT.*

***Russell T. Jones** is professor of psychology at Virginia Tech University, and a clinical psychologist who specializes in trauma psychology in the areas of natural and technological disasters as well as interpersonal violence. He is a Fellow of the American Psychological Association (APA), and served as a member of the Board for the Advancement of Psychology in the Public Interest and as a liaison to the Child, Youth and Family Committee, both within APA.*

***Michael Hughes** is professor of sociology at Virginia Tech. His main research interests include mental health/illness, ethnic and racial identity, racial attitudes, and patterns of cultural choice. Recent articles have appeared in *Psychological Trauma: Theory, Research, Practice, and Policy*, and *The Annals of the American Academy of Political and Social Science*.*

## **Introduction**

On April 16, 2007, the nation was shaken by one of the worst tragedies on a college campus. Thirty one students and faculty were killed in shootings in two buildings at Virginia Tech. The immediate impact of the shootings were wide-spread, with several students and faculty witnessing the shootings, being in lock-down, seeing the dead and the wounded, and viewing it on the media. Several studies have shown that mass shootings can have a long term negative impact on psychological health of the survivors and witnesses (Johnson, North, & Smith, 2002). A small number of studies have also shown that mass shootings at schools can have a negative impact on children (Brymer, 2007; Scrimin et al., 2006). Although there have been many more mass shootings in the U.S., very few have been carefully researched. Norris (2007) reviewed the existing literature on twelve mass shootings in the U.S. and found three studies on high school and two on elementary school shootings. However, no study addressing the aftermath of mass shootings on college campuses was found. Within the current literature on mass shootings, there is a lack of a careful consideration of the impact of race and parental factors on the development, maintenance, and recovery following these events.

Although several studies have found proximity or the level of objective exposure to traumatic events to be predictive of posttraumatic outcomes (Hoven et al. 2005; Goenjian et al., 2005), subjective exposure such as perceived threat to life of self and others has been found to correspond more to such outcomes. Subjective psychological factors such as the reactions during the event, evaluations of the events, and meaning given to the event are more predictive of outcomes than are objective factors (Ozer, Best, Lipsey, & Weiss, 2008). Perceived life threat has been found to predict PTSD among disaster survivors (Hier, Piatigorsky, & Weisaeth, 2008), combat veterans (Mott, Graham, & Teng, 2011), and bus explosion survivors (Gil & Caspi, 2006). As such, this construct can have considerable impact on posttraumatic outcomes following mass shootings as well, which might not be captured by assessment of objective exposure alone. Hence a strong case can be made for its inclusion when exploring such outcomes.

The differential impact of large-scale traumatic events on different ethnic and racial groups has been reported in several studies (Adams & Boscarino, 2006; Galea et al., 2002). With regard to the Asian population, research shows high rates of posttraumatic stress disorder (PTSD) and other symptomology among Vietnam Vets (Friedman, Schnurr, Sengupta, Holmes, & Ashcraft, 2004), refugees (Kinzie, Leung, & Boehlein, 1997), and survivors of natural disasters (Norris, VanLandingham, and Vu, 2009). Despite these findings, the research on Asians, especially college students, is sparse. The existing literature, however, does point at the need for more research in the domain of Asian college students and their mental well-being. Studies on college students have found that Asian American students exhibit significantly elevated rates of mental health problems when compared to Caucasian respondents (Eisenberg, Gollust, Golberstein, & Hefner, 2007; Kisch, Leino, & Silverman, 2005; Lau, Fung, Wang, & Kang, 2009; Young, Fang, and Zisook, 2010). Studies have also shown that Asian American students tend to have negative attitudes towards professional mental health, and are less likely to seek out help which can exacerbate to their psychological problems (Lee et al., 2009; Leong, Kim, & Gupta, 2011).

Many Asian cultures are collectivistic and highlight connectedness of human beings that is inextricable, as opposed to individualistic cultures that emphasize independence from others. The close relationship between parents and children in Asian societies, including high level of

parental involvement, overprotection, and control, is culturally accepted more so than in Western societies (Huang, 1997; Tang, 1992). The primary identity of the Asian is as part of the family and seeking a definition of self is constrained by elaborate system of family rules and obligations (Huang, 1997; Tang, 1992). Studies have consistently found that parents in collectivistic Asian societies, in keeping with the tradition of interdependence, use an authoritarian parenting style much more than authoritative parenting or permissive parenting (Inman, Howard, Beaumont, & Walker, 2007). Although it is generally accepted, such parenting is found to be deleterious to the development of Asian children and adolescents growing up in modern societies, both in the West and in Asia (Greenberger, Chen, Tally, & Dong, 2000; Lowinger & Kwok, 2001). Furthermore, the relationship with parents has been found to be especially challenging with regards to the adjustment among Asian students. Several studies have reported that conflict between Asian parents and their college-aged offspring, due to acculturation gap (Park, Kim, Chaing, Ju, 2010), differences in social values (Ahn, Kim, & Park, 2009), and educational expectations (Tan & Yates, 2011), can lead to significant problems in psychological functioning among these college students.

Parental functioning and reactions to their children's traumatic experiences can have several implications on one's mental health. Although only limited research has been done in this field, some consistent and significant findings suggest that parental overprotection can lead to low social adjustment (Nelson et al., 2006), depression (Martin, Bergen, Roeger, & Allison, 2004), somatic symptoms (Janssens, Oldehinkel, & Rosmalen, 2009), and various externalizing disorders (Enns, Cox, & Clara, 2002). Tiwari et al. (2008), in their review of theory and evidence for parenting practices and anxiety in youth, posit that parents of anxious youth are unable and unwilling to manage their own distress due to the child's anxieties, and display intrusive behaviors that are aimed at reducing the child's anxieties and thus their own distress. However, Chorpita, Albano, and Barlow (1996) report that such displays of anxious ideas from parents may increase threat activation among anxious children due to easy and continuous activation of threat-related cognitive structures. Polusny et al. (2011) found that parental functioning and posttraumatic symptoms impacted adolescents' experiential avoidance and PTSD symptoms following a natural disaster, highlighting the importance of familial context in post-disaster reactions. Parental overprotectiveness and infantilization of children and adolescents have also been found to result in PTSD symptoms following traumatic events (Bokszczanin, 2008; McFarlane, 1987).

A few studies have shown a moderational role of an intrusive parenting style in general on risk factors and outcomes. Yeates, Taylor, Walz, Stancin, and Wade (2010) found that among children with traumatic brain injury (TBI), those whose parents reported higher levels of authoritarian parenting, had more pronounced effects of TBI on maladjustment. They concluded that the moderating effect of authoritarian parenting might result in limited stimulation that could potentially help lessen the effects of brain injuries. Dorius, Bahr, Hoffmann, and Harmon (2004) also reported a moderating role of parenting practices such as parental monitoring and closeness with parents in the relationship between peer drug use and adolescent marijuana use. However, studies have not looked at parental reactions to traumatic events as moderators between the relationship between the event and negative psychological outcomes.

While parental intrusion, expression of anxiety, and overprotective behaviors have been explored well in the child literature, these constructs have not been studied adequately among college students. Although college students may not be as connected with and influenced by their parents' emotional states, it is possible that they nevertheless have some impact on the

students' functioning. The relationship between parents and their college-aged off-springs may be especially important in the current Millennial generation, where parents are known to be highly involved with their offspring (Howe & Strauss, 2000). Furthermore, given the empirical findings regarding the high involvement of Asian parents in their children's lives and the subsequent impact it has on the mental health status of their college age students, it is especially important to understand the impact parental intrusion and overprotection can have on them following traumatic events.

Based on the existing literature on the impact of perceived threat and parental influences on anxiety and posttraumatic symptoms among youths, it was hypothesized that higher levels of perceived threat to own life, perceived threat to life of others, and different parental reactions would independently predict higher level of posttraumatic stress. It was further hypothesized that parental behaviors would moderate the relationship between perceived threat and posttraumatic stress.

## **Method**

### *Participants and Procedure*

Participants of the current study were taken from a larger dataset of 4,639 survivors of the April 16<sup>th</sup> shootings at Virginia Tech (Hughes et al., 2011). Three months after the shootings, on July 10, an online email survey was administered by the Virginia Tech Center for Survey Research. The three month period allowed sufficient time for normal short-term symptoms of distress to subside. An advance email notifying all potential respondents about the survey, encouraging them to participate, and assuring them that the survey would be confidential preceded the survey email. Consent information, which had to be completed in order for the respondent to be administered the rest of the survey, was included in the first section of the survey. Respondents who indicated that they did not want to participate were not contacted further, while the non-respondents were sent reminder emails. At the close of the survey, 20% of the target sample of 23,214 registered students had completed the survey, .1% refused, and 79.9% provided no response. Two hundred and fifty-four respondents of the online survey indicated Asian as their race (biracial respondents were not included). The survey was also sent out to all faculty and staff, but their data is not included in the current study.

### *Measures*

The online survey included items primarily based on questionnaires used in previous trauma studies as well as insights gleaned from preliminary focus group interviews with a small number of VT students was administered to the participants. Two focus groups with five students each, one with graduate students and another with residence hall advisors, were utilized for this purpose. The groups were primarily aimed at a better understanding of stressors the students had been exposed to during the shootings and the three months between the shootings and the survey (Hughes et al., 2011).

Perceived threat. Two items assessing the students' perception of trauma severity and threat were included in the survey: "How afraid were you that you might be killed at your worst moment on April 16?" and "How afraid were you that someone you cared about would be seriously hurt or

killed?” Each of the items asked for a rating on a 0-10 scale, 0 being not scared at all, and 10 being extremely scared.

Posttraumatic stress. A screening scale for posttraumatic symptoms was included in the survey. This scale is based on the Trauma Screening Questionnaire (TSQ, Brewin et al., 2002), a validated screen for PTSD that was used in a study of survivors of Hurricane Katrina (Galea et al., 2007; Kessler, Galea, Jones, & Parker, 2006). It is also based on a two-week recall period. A clinical reappraisal study indicated that the diagnoses based on the TSQ used in the Hurricane Katrina sample had excellent concordance with diagnoses based on DSM-IV PTSD, with sensitivity of .89, specificity of .93 (Brewin, 2005). The PTSD screening measure used in this study consisted of 10 items, each of which were rated on a 1 to 5 scale, with 1 being “never” and 5 being “just about every day”. The responses were summed to create a continuous scale ranging from 10 to 50.

Parental reactions. Four items addressing parental concerns and protective behaviors towards the respondents (being overprotective, expressing concern about future safety, urging not to return to Virginia Tech, and being so upset that it interfered with own recovery), were included in the original online survey. The responses from each of the items were recorded in a five-point Likert scale ranging from “not at all” to “extremely”. Each item was used as a continuous scale to assess the level of each of these parental reactions following the shootings.

## Results

Hierarchical linear regressions were conducted to assess the prediction of posttraumatic stress using perceive threat to self, perceived threat to others, and each of the four parental reactions. Additionally, hierarchical regression models were also run to assess the moderating role of parental reactions in the relationship between perceived threat and posttraumatic stress. In each of the models, age and gender were entered first so as to partial out their impact. Hierarchical regression was used for the purpose of this study because such method of analysis is helpful in understanding the relationship between one or more predictors and a dependent variable while taking into account or controlling for one or more covariates. It allows a researcher to judge how much a predictor adds to the prediction of the independent variable over and above that of the covariate or predictor (Petrocelli, 2003).

### *Prediction from Perceived Life Threat*

The analyses revealed that both perceived threat to life of self ( $B = .903$ ,  $p < .000$ ) and that of others ( $B = 1.236$ ,  $p < .000$ ) significantly predicted posttraumatic stress. Perceived threat to self accounted for 10.2% of the total variance, while perceived threat to others accounted for 12.3% of the total variance in the prediction of posttraumatic stress. The results of these analyses are presented in Table 1 (Models 1 and 2).

### *Prediction from Parental Reactions*

Each of the parental reactions tested significantly predicted posttraumatic stress. Of the four reactions, “expressed concern” predicted 8.7% of the total variance ( $B = 2.017$ ,  $p < .000$ ),

while “urged you not to return to Virginia Tech” predicted 7.1% of the variance ( $B = 2.900$ ,  $p < .000$ ). “Been overprotective” predicted 16.6% ( $B = 3.337$ ,  $p < .000$ ) and “been so upset that it interfered with own recovery” predicted 19% ( $B = 6.268$ ,  $p < .000$ ) of the variance. The results of these analyses are presented in Table 1 (Models 3-6).

**Table 1: Hierarchical Regression Analyses for Variables Predicting Posttraumatic Stress**

	1	2	3	4	5	6
Intercept	20.687	9.995	18.070	17.587	12.364	13.026
Age	-.239	-.027	-.217	-.138	-.022	-.119
Gender	1.359	1.353	2.223	2.246	2.172	2.157*
Perceived Threat (Self)	.903***	-	-	-	-	-
Perceived Threat (Others)	-	1.236***	-	-	-	-
Expressed Concern	-	-	2.017***	-	-	-
Urged to not Return	-	-	-	2.900***	-	-
Been Overprotective	-	-	-	-	3.337***	-
Been Upset	-	-	-	-	-	6.268***
R <sup>2</sup>	.106	.123	.087	.071	.166	.190

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

#### *Parental Reactions as Moderators*

Hierarchical multiple regression analyses were conducted to test the hypothesized moderating role of each of the parental reactions. Specifically, the potential moderating role of each of these variables on the relationship between perceived threat (to own life and to others' life, separately) and posttraumatic stress were examined. Before conducting the analyses, age was centered to eliminate problematic multicollinearity effects between first-order terms and the higher order terms (Holmbeck, 1997). Each of these analyses included four steps. In the first step, gender and age were entered to control for their effects. In the second step, perceived threat was entered. The proposed moderator (i.e., parental reactions) was entered in step three. The last step consisted of entering the interaction variable (i.e., perceived threat X parental reaction). A moderation effect is present if the interaction term is found to be a significant predictor of posttraumatic stress when the main effects have been included in the model (Aiken & West, 1991). The analyses failed to show that parental reactions are significant moderators of the relationship between perceived life threat and posttraumatic stress. The results of the moderator analyses for perceived threat to self are presented in Table 2 (Models 7-10) and those for perceived threat to others are presented in Table 3 (Models 11-14).

**Table 2: Hierarchical Regression Analyses for Variables Predicting Moderation for Perceived Threat of Self**

	7	8	9	10
Intercept	19.457	18.336	14.268	14.631
Age	-.263*	-.209	-.085	-.185
Gender	1.658	1.620	1.553	1.758
Perceived Threat	.386	.555	.147	.315
Expressed Concern	.894	-	-	-
PT X EC	.123	-	-	-
Urged not to Return	-	1.381	-	-
PT X UR	-	.206	-	-
Been Overprotective	-	-	1.744	-
PT X BO	-	-	.304	-
Been Upset	-	-	-	4.046*
PT X BU	-	-	-	.344
R <sup>2</sup>	.139	.146	.237	.253

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

**Table 3: Hierarchical Regression Analyses for Variables Predicting Moderation for Perceived Threat of Others**

	11	12	13	14
Intercept-	10.459	7.941	3.608	4.173
Age	-.082	.002	.081	.002
Gender	1.662	1.615	1.606	1.573
Perceived Threat	.776	.904	.985*	.942
Expressed Concern	.587	-	-	-
PT X EC	.135	-	-	-
Urged not to Return	-	.874	-	-
PT X UR	-	.269	-	-
Been Overprotective	-	-	2.716	-
PT X BO	-	-	.034	-
Been Upset	-	-	-	4.726
PT X BU	-	-	-	.133
R <sup>2</sup>	.167	.176	.238	.272

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

## Discussion

This study was the first to examine the impact of perceived threat to life of self and others at Virginia Tech on post-traumatic stress symptoms in Asian students. The moderating roles of parental reactions were also tested. The hypothesis stating that greater perceived threat during

the shootings would lead to greater levels of posttraumatic stress was supported for both perceived threat to self and that to others. This finding is consistent with previous studies that have looked at the impact of perceived threat to life of self and others on posttraumatic outcomes (Gil & Caspi, 2006; Hier, Piatigorsky, & Weisaeth, 2008; Ozer et al., 2008). It suggests that the peritraumatic reactions can be important factors in the development of posttraumatic symptoms. The fear of one's own life during the shootings significantly impacts mental health, as does the fear of losing someone one cares about. Interestingly, fear of others, (i.e., a cared person getting hurt or being killed), accounted for more variance, albeit not by much, in posttraumatic stress than did fear of self being hurt or killed, suggesting that fear of losing loved ones might have greater impact on mental health following disasters. One explanation for this finding may be that most students were in locked buildings following the immediate aftermath of the shootings, thus providing some sense of safety. But on the other hand, not being able to contact their friends and loved ones may have led to greater fear about their whereabouts and status.

The hypothesis stating that parental reactions would be positively associated with posttraumatic symptoms was also supported, which is consistent with previous studies looking at traumatic events and parental behaviors (Bokszczanin, 2008; McFarlane, 1987). Students who reported higher levels of parents expressing concern, being overprotective, urging not to return to campus, and being very upset also reported higher levels of posttraumatic stress. With regard to adolescents and college students, other studies have consistently shown that excessive parental involvement can have a negative impact on psychological adjustment (Soucy & Larose, 2000). For example, Soucy and Larose (2000) found that psychological control by parents (i.e., emotional manipulation, interference in psychological and emotional development), was negatively associated with adjustment in college. These findings along with the conclusions from the current study indicate that parental reactions can exacerbate the impact of a stressful event on the mental health of college students.

Although only sparse research has been done on parental anxiety and mental health in college students, the current findings can be explained by extrapolating from the abundant child literature on this subject. Studies have consistently found that parental anxieties and related experiential avoidance can increase experiential avoidance among their off-springs. Tiwari et al. (2008) report that intrusive and overprotective parents, both mothers and fathers, may model anxiety and avoidant behaviors as well as reinforce anxious avoidance. Indeed, the items "expressed concern" and "urged you not to return to Virginia Tech", which tapped into modeling anxiety and supporting anxious avoidance, respectively, accounted for modest amounts of variance in the prediction of posttraumatic stress. Anxious parents may also lack positive beliefs and expectations about their children's ability to cope with stressful situations, and thus may be quick to intervene in such situations (Kortlander, Kendal, & Panichelli-Mindel, 1997). The item "been overprotective", which assessed for general perception of such parental behaviors by the students, accounted for moderate variance in the prediction of posttraumatic stress. The highest amount of variance was predicted by "been so upset that it interfered with your own recovery", suggesting that expression of high levels of anxiety and concern by parents could lead to noticeable decline in the students' ability to cope with the stressful situation.

Despite the above findings, none of the parental reactions was found to moderate the relationship between level of perceived threat and posttraumatic outcome. Thus, the current study showed that for the students who experienced high levels of perceived threat, their parental reactions did not matter. They developed posttraumatic stress regardless of the level of negative reactions from their parents. Alternately, it could also be that the level of perceived threat did

not impact the high levels of negative parental reactions on posttraumatic stress. Given the significant main effects for both of these constructs, it can be concluded that perceived threat and parental reactions function as independent predictors of posttraumatic outcomes, and may not have significant interactive effects.

The findings of this study suggest that excessive intrusion and concern by parents of Asian college students can prevent the proper processing of traumatic events that is necessary for healthy post-disaster psychological functioning and/or aid their offspring's recovery. Interventionists should become more astute at communicating ways in which mental health professional and parents should assist those impacted by traumatic events (National Biodefense Science Board, 2010). This may be particularly relevant when targeting students of the Millennial Generation, who are afforded greater supervision, more structure, and are pressured to excel in all facets of their lives by their parents (Howe & Strauss, 2000). Additionally, issues such as the acculturation gap and conflict in values between the students and their parents should be carefully studied and appropriately handled when establishing prevention programs or interventions for the Asian population.

### **Limitations**

Notwithstanding the findings in this study, several shortcomings should be noted. The retrospective nature of the data collection process may have led to recall bias. The use of screening scales for PTSD rather than structured diagnostic instruments may have also been problematic. Although the scale upon which the current measure is based has been shown to have good psychometric properties (Galea et al., 2007; Kessler et al., 2008), interpretations regarding the presence of PTSD should be made with caution. Culturally relevant factors such as fear of stigmatization (Loya, Reddy, & Hinshaw, 2010), collectivistic thinking regarding expression of emotions (Inman & Yeh, 2007), and low use of mental health services among Asian and Asian Americans (Wong, Kim, & Tran, 2010) were also not assessed. It is highly likely that psychological distress in the current sample might have manifested as somatic symptoms, found in high rates in the Asian population (Ryder et al., 2008), rather than posttraumatic stress, but were not assessed in the current study. Future studies should take into account cultural considerations including idioms of distress (Jones, Dugan Burns, Immel, Schwartz-Goel, & Moore, in press) as well as other culturally specific reactions. Although some studies have shown that Asians of different ethnicities have differential psychological adjustment difficulties (Sue, Sue, Sue, & Takeuchi, 1995; Yeh, 2003), the current study did not ascertain psychological functioning across the diverse racial and ethnic groups that make up the Asian population at Virginia Tech. Adequate attention to these factors could shed better light on the impact parental reactions on psychological functioning in the Asian population following a traumatic event.

### **Conclusion**

The findings from the current study indicate that parental reactions such as expression of concern, overprotection, urging not to return to Virginia Tech, and being very upset predicted higher levels of posttraumatic stress. High level of perceived threat also predicted higher levels of posttraumatic stress. Parental reactions, however, did not emerge as moderators. Further

research of these constructs with thorough and validated measures might shed light into the complex relationships among these constructs.

## References

- Adams, R. E., & Boscarino, J. A. (2006). Predictors of PTSD and delayed PTSD after disaster: The impact of exposure and psychosocial resources. *Journal of Nervous and Mental Diseases, 194*, 485-493. doi: 10.1097/01.nmd.0000228503.95503.e9.
- Ahn, A. J., Kim, B. S. K., & Park, Y. S. (2009). Asian cultural values gap, cognitive flexibility, coping strategies, and parent-child conflicts among Korean Americans. *Asian American Journal of Psychology, 5*, 29-44. doi: 10.1007/s11218-010-9146-7
- Aiken, L. S., & West, S. G. (1991). *Multiple Regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Bokszczanin, A. (2008). Parental support, family conflict, and overprotectiveness: Predicting PTSD symptom levels of adolescents 28 months after a natural disaster. *Anxiety, Stress & Coping: An International Journal, 24*, 325-335. doi: 10.1080/10615800801950584
- Brewin, C. R. (2005). Systematic review of screening instruments for adults at risk of PTSD. *Journal of Traumatic Stress, 18*, 53-62. doi: 10.1002/jts.20007
- Brewin, C. R., Rose, S., Andrews, B., Green, J., Tata, P., McEvedy, C., Turner, S., & Foa, E. B. (2002). Brief screening instrument for post-traumatic stress disorder. *British Journal of Psychiatry, 181*, 158-162. doi: 10.1192/bjp.181.2.158
- Brymer, M. J. (2007). *The psychological impact of a school shooting on high school students*. (Unpublished doctoral dissertation). Nova Southeastern University, Florida.
- Chorpita, B. F., Albano, A. M., & Barlow, D. H. (1996). Cognitive processing in children: relation to anxiety and family influences. *Journal of Clinical Child Psychology, 25*, 170-176.
- Dorius, C. J., Bahr, S. J., Hoffman, J. P., & Harmon, E. L. (2004). Parenting practices as moderators of the relationship between peers and adolescent marijuana use. *Journal of Marriage and Family, 66*, 163-178. doi: 10.1111/j.0022-2445.2004.00012.x
- Eisenberg, D., Gollust, S. E., Golberstein, E., & Hefner, J. L. (2007). Prevalence and correlates of depression, anxiety, and suicidality among university students. *American Journal of Orthopsychiatry, 77*, 534-542. doi: 10.1037/0002-9432.77.4.534
- Enns, M. W., Cox, B. J., & Clara, I. (2002). Parental bonding and adult psychopathology: Results from the US national comorbidity survey. *Psychological medicine: A Journal of Research on Psychiatry and the Allied Sciences, 32*, 997-1008. doi: 10.1017/S0033291702005937
- Friedman, M. J., Schnurr, P. P., Sengupta, A., Holmes, T., & Ashcraft, M. (2004). The Hawaii Vietnam Veterans Project: Is minority status a risk factor for posttraumatic stress disorder? *Journal of Nervous and Mental Disease, 192*, 42-50. doi: 10.1097/01.nmd.0000105999.57129.ee
- Galea, S., Ahern, J., Resnick, H., Kilpatrick, D., Bucuvalas, M., Gold, J., & Vlahiv, D. (2002). Psychological sequelae of the September 11 terrorist attacks in New York City. *The New England Journal of Medicine, 346*, 982-987. doi: 10.1056/NEJMsa013404
- Galea, S., Brewin, C. R., Gruber, M., Jones, R. T., King, D. W., King, L. A., McNally, R. J.,

- Ursano, R. J., Petukhova, M., & Kessler, R. C. (2007). Exposure to hurricane-related stressors and mental illness after Hurricane Katrina. *Archives of General Psychiatry*, *64*, 1427-1434. doi: 10.1001/archpsyc.64.12.1427
- Gil, S., & Caspi, Y. (2006). Personality traits, coping style, and perceived threat as predictors of posttraumatic stress disorder after exposure to a terrorist attack: A prospective study. *Psychosomatic Medicine*, *68*(6), 904-909. doi: 10.1097/01.psy.0000242124.21796.f8
- Goenjian, A. K., Walling, D., Steinberg, A. M., Karayan, I., Najarian, L. M., & Pynoos, R. S. (2005). A prospective study of posttraumatic stress and depressive reactions among treated and untreated adolescents 5 years after a catastrophic disaster. *American Journal of Psychiatry*, *162*, 2302-2308. doi: 10.1176/appi.ajp.162.12.2302
- Greenberger, E., Chen, C., Tally, S. R., & Dong, Q. (2000). Family, peer, and individual correlates of depressive symptomology among U.S. and Chinese adolescents. *Journal of Consulting and Clinical Psychology*, *68*, 209-219. doi: 10.1037/0022-006X.68.2.209
- Hier, T., Piatigorsky, A., & Weisaeth, L. (2008). Longitudinal changes in recalled perceived life threat after a natural disaster. *The British Journal of Psychiatry* *194*, 510-514. doi: 10.1192/bjp.bp.108.056580
- Holmbeck, G. N. (1997). Toward terminological, conceptual, and statistical clarity in the study of mediators and moderators: Examples from the child-clinical and pediatric psychology literatures. *Journal of Consulting and Clinical Psychology*, *65*, 599-610.
- Hoven, C. W., Duarte, C. S., Lucas, C. P., Wu, P., Mandell, D. J., Goodwin, R. D., Susser, E. (2005). Psychopathology among New York City public school children 6 months after September 11. *Archives of General Psychiatry*, *62*, 545-551. doi: 10.1001/archpsyc.62.5.545
- Howe, H., & Strauss, W. (2000). *Millennials Rising: The Next Great Generation*. New York: Vintage Books.
- Huang, D. (1997). The role of parental expectation, effort and self-efficacy in the achievement of high and low track high school students in Taiwan. *Dissertation Abstracts International Section A: Humanities and Social Sciences*, 3882.
- Hughes, M., Brymer, M., Chiu, W. T., Fairbank, J. A., Jones, R. T., Pynoos, R. S., Rothwell, V., Steinberg, A. M., & Kessler, R. C. (2011, July 18). Posttraumatic stress disorder among students after the shootings at Virginia Tech. *Psychological Trauma: Theory, Research, Practice, and Policy*. Advance online publication. Doi: 10.1037/a0024565
- Inman, A. G., & Yeh, C. J. (2007). Asian American stress and coping. In F. T. L. Leong, A. Ebreo, L. Kinoshita, A. G. Inman, L. H. Yang, & M. Fu (Eds.), *Handbook of Asian American Psychology*, 2<sup>nd</sup> Ed, (pp. 323-339). Thousand Oaks, CA: Sage Publications, Inc.
- Janssens, K.A., Oldehinkel A. J., & Rosmalen, J. G. M. (2009). Parental overprotection predicts the development of functional somatic symptoms in young adolescents. *The Journal of Pediatrics*, *154*, 918-923. doi: 10.1016/j.jpeds.2008.12.023
- Johnson, S. D., North, C. S., & Smith, E. M. (2002). Psychiatric disorders among victims of a courthouse shooting spree: A three-year follow-up study. *Community Mental Health Journal*, *38*, 181-194. doi: 10.1023/A:1015269521969
- Jones, R.T., Dugan Burns, K., Immel, C.S., Schwartz-Goel, K., & Moore, R.M. (In Press). Ethnic and racial factors. In C. Figley (Ed.), *Encyclopedia of Trauma*. Thousand Oaks, CA: Sage Publications.
- Kessler, R. C., Galea, S., Gruber, M. J., Sampson, N. A., Ursano, R. J., & Wessely, S. (2008).

- Trends in mental illness and suicidality after Hurricane Katrina. *Molecular Psychiatry*, 13, 374-384. doi: 10.1038/sj.mp.4002119
- Kessler, R. C., Galea, S., Jones, R. T., & Parker, H. A. (2006). Mental illness and suicidality after Hurricane Katrina. *World Health Organization Bulletin*, 84, 930-939.
- Kinzie, J. D., Leung, P. K., & Boehnlein, J. K. (1997). Treatment of Depressive Disorders in Refugees. In E. Lee (Ed.), *Working with Asian Americans: A Guide for Clinicians*. New York, NY: Guilford Press.
- Kisch, J., Leino, E. V., & Silverman, M. M. (2005). Aspects of suicidal behavior, depression, and treatment in college students: Results from the Spring 2000 national college health assessment survey. *Suicide and Life-Threatening Behavior*, 35, 3-13. doi: 10.1521/suli.35.1.3.59263
- Lau, A. S., Fung, J., Wang, S., & Kang, S. (2009). Explaining elevated social anxiety among Asian Americans: Emotional attunement and a cultural double bind. *Cultural Diversity and Ethnic Minority Psychology*, 15, 77-85. doi: 10.1037/a0012819
- Lee, C., Chang, J., Liu, C., Chang, C., Chen, T. H.H., Chen, C., & Cheng, A. T.A. (2009). Acculturation, psychiatric comorbidity and posttraumatic stress disorder in a Taiwanese aboriginal population. *Journal of Social Psychiatry and Psychiatric Epidemiology*, 44, 55-62. doi: 10.1007/s00127-008-0405-2
- Leong, F. T. L., Kim, H. H. W., & Gupta, A. (2011). Attitudes toward professional counseling among Asian-American college students: Acculturation, conception of mental illness, and loss of face. *Asian American Journal of Psychology*, 2, 140-153. doi: 10.1037/a0024172
- Lowinger, R. J., & Kwok, H. (2001). Parental overprotection in Asian American children: A psychodynamic clinical perspective. *Psychotherapy: Theory, Research, Practice, Training*, 38, 319-330. doi: 10.1037/0033-3204.38.3.319
- Loya, F., Reddy, R., & Hinshaw, S. P. (2010). Mental illness stigma as a mediator of differences in Caucasian and South Asian college students' attitude toward psychological counseling. *Journal of Counseling Psychology*, 57, 484-490. doi: 10.1037/a0021113
- Martin, G., Bergen, H. A., Roeger L., & Allison, S. (2004). Depression in young adolescents: Investigations using 2 and 3 factor versions of the Parental Bonding Instrument. *Journal of Nervous and Mental Disease*, 192, 650-657. doi: 10.1097/01.nmd.0000142028.10056.c6
- McFarlane, A. C. (1987). Family functioning and overprotection following a natural disaster: The longitudinal effects of post-traumatic morbidity. *Australian and New Zealand Journal of Psychiatry*, 21, 210-218. doi: 10.3109/00048678709160914
- Mott, J. M., Graham, D. P., Teng, E. J. (2011). Perceived threat during deployment: Risk factors and relation to Axis I disorders. *Psychological Trauma: Theory, Research, Practice, and Policy*. doi: 10.1037/a0025778
- National Biodefense Science Board. (2010). *Integration of mental and behavioral health in federal disaster preparedness, response, and recovery: Assessment and recommendations*. Retrieved May 20, 2011 from <http://www.phe.gov/preparedness/legal/boards/nbsb/meetings/documents/dmhreport1010.pdf>
- Nelson, L. J., Hart, C. H., Wu, B., Yang, C., Roper, S. O., & Jin, S. (2006). Relations between Chinese mothers' parenting practices and social withdrawal in early childhood. *International Journal of Behavioral Development*, 30, 261-271. doi: 10.1177/01650254060666761

- Norris, F. H. (2007). Impact of mass shootings on survivors, families, and communities. *PTSD Research Quarterly*, 18, 1-7.
- Norris, F. H., Vanlandingham, M. J., & Vu, L. (2009). PTSD in Vietnamese Americans following Hurricane Katrina: Prevalence, Patterns, and Predictors. *Journal of Traumatic Stress*, 22, 91-101. doi: 10.1002/jts.20389
- Ozer, E. J., Best, S. R., Lipsey, T. L., & Weiss, D. S. (2008). Predictors of posttraumatic stress disorder and symptoms in adults: A meta-analysis. *Psychological Trauma: Theory, Research, Practice, and Policy*, 5(1), 3-36. doi: 10.1037/1942-9681.S.1.3
- Park, Y. S., Kim, B. S., K., Chiang, J., & Ju, C. M. (2010). Acculturation, enculturation, parental adherence to Asian cultural values, parenting styles, and family conflict among Asian American college students. *Asian American Journal of Psychology*, 1, 67-79. doi: 10.1037/a0018961
- Petrocelli, J. V. (2003). Hierarchical multiple regression in counseling research: Common problems and possible remedies. *Measurement and Evaluation in Counseling and Development*, 36, 9-22.
- Polusny, M. A., Ries, B. J., Meis, L. A., DeGarmo, D., McCormick-Deaton, C. M., Thuras, P., & Erbes, C. R. (2011). Effects of parents' experiential avoidance and PTSD on adolescent disaster-related posttraumatic stress symptomatology. *Journal of Family Psychology*, 25, 220-229. DOI: 10.1037/a0022945
- Ryder, A. G., Yang, J., Zhu, X., Yao, S., Yi, J., Heine, S. J., & Bagby, R. M. (2008). The cultural shaping of depression: Somatic symptoms in China, psychological symptoms in North America? *Journal of Abnormal Psychology*, 117, 300-313. doi: 10.1037/0021-843X.117.2.300
- Scrimin, S., Axia, G., Capello, F., Moscardino, U., Steinberg, A. M., & Pynoos, R. S. (2006). Posttraumatic reactions among injured children and their caregivers 3 months after the terrorist attack in Beslan. *Psychiatry Research*, 141, 333-336. doi: 10.1016/j.psychres.2005.11.004
- Soucy, N., & Larose, S. (2000). Attachment and control in family and mentoring contexts as determinants of adolescent adjustment to college. *Journal of Family Psychology*, 14, 125-143. doi: 10.1037//0893-3200.14.1.125
- Sue, S., Sue, D. W., Sue, L., & Takeuchi, D. T. (1995). Psychopathology among Asian Americans: A model minority? *Cultural Diversity and Mental Health*, 1, 39-51. doi:10.1037/1099-9809.1.1.39
- Tan, J. B., & Y, S. (2011). Academic expectations as sources of stress in Asian students. *Social Psychology of Education*, 14, 389-407. doi: 10.1007/s11218-010-9146-7
- Tang, N. M. (1992). Some Psychoanalytic implications of Chinese philosophy and child-rearing practices. *The Psychoanalytic Study of the Child*, 47, 371-389.
- Tiwari, S., Podell, J. C., Martin, E. D., Mychailyszyn, M. P., Furr, J. M., & Kendall, P. C. (2008). Experiential avoidance in the parenting of anxious youth: Theory, research, and future directions. *Cognition & Emotion*, 22, 480-496. DOI: 10.1080/02699930801886599
- Wong, T. J., Kim, S., & Tran, K. K. (2010). Asian Americans' adherence to Asian values, attributions about depression, and coping strategies. *Cultural Diversity and Ethnic Minority Psychology*, 16, 1-8. doi: 10.1037/a0015045
- Yeates, K. O., Taylor, H. G., Walz, N. C., Stancin, T., & Wade, S. L. (2010). The family environment as a moderator of psychosocial outcomes following traumatic brain injury in young children. *Neuropsychology*, 24, 345-356. doi: 10.1037/a0018387

- Yeh, C. J. (2003). Age, acculturation, cultural adjustment, and mental health symptoms of Chinese, Korean, and Japanese immigrant youths. *Cultural Diversity and Ethnic Minority Psychology, 9*, 34-48. doi: 10.1037/1099-9809.9.1.34
- Young, C. A., Fang, D. Z., & Zisook, S. (2010). Depression in Asian-American and Caucasian undergraduate students. *Journal of Affective Disorders, 125*, 379-382. doi:10.1016/j.jad.2010.02.124