

SUICIDE IDEATION AND ATTEMPT AMONG INTERNATIONAL STUDENTS IN THE UNITED STATES

- Hosik Min
- University of South Alabama
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BACKGROUND

- The goal of this paper: to examine the associations between relationship-oriented/academic stress factors and the suicidal ideation/attempt to international students, with a comparison to the American students
- There is insufficient understanding for international students' suicidal ideation/attempt
- According to U.S. Immigration and Customs Enforcement (ICE) report (SEVP, 2018), more than 1.5 million college students were international students in the U.S. in 2018 (about 7.5% of the whole college students), seven out of top 10 countries of international students were from Asian countries. Considering many international students were enrolled in major and bigger universities, the proportion of the international students in those universities would be higher than the national average

DATA

- The College Health Association-National College Health Assessment (ACHA-NCHA) II survey data were used
- It provides the most extensive comprehensive data set on the health of college students. The survey follows and replicates the questionnaires and procedures of nationally representative surveys such as the National College Health Risk Behavior Study, the Harvard School of Public Health College Alcohol Study, and the National College Women Sexual Victimization Study.
- The process of data collection: 1) Institutions with Institutional Review Boards (IRB) approval, 2) The ACHA surveyed either all such students or to randomly selected students from their list of potential participants

DATA

- The data used in this study was compiled from the ACHA-NCHA II survey from the years 2011 to 2014 to obtain a sufficiently large sample of international students for the analysis. This was necessary as, for example, there were only 29 cases of suicidal attempt for international students in 2014, and this was too few for the analysis. After deleting all the missing cases by a step-wise process, this study obtained data from 9,244 international students, which was about 8.8% of the whole sample. International students were selected based on a survey question, "Are you an international student? (Yes and no)"

METHODS

- Logistic regression models were employed as dependent variables, with suicidal ideation and attempt having a binary outcome (yes=1, no=0). Two separate logistic regression models were performed as suicidal ideation and attempt were assumed to hold potentially different associations with the factors under investigation. Statistical software STATA 16.1 was used for data analysis.

INDEPENDENT VARIABLES

- **Age:** average
- **Gender:** female (yes=1)
- **Sexual Orientation:** heterosexual, gay/lesbian, bisexual, and unsure
- **Abusive relationship:** 1) emotionally abusive (e.g., called derogatory names, yelled at, or ridiculed); 2) physically abusive (e.g., kicked, slapped, or punched; and 3) sexually abusive (e.g., forced to having sex when it was unwanted, or the participant being forced to perform or have a sexual act performed on you)
- **Substance use:** whether a respondent used marijuana, cocaine, methamphetamine, or other amphetamines within the last 12 months (yes = 1, no = 0)

INDEPENDENT VARIABLES

- **Depression:** within the 12 months, have you been diagnosed or treated by a professional for depression?
- **Death in a family or friend:** within the 12 months, have a death of a family member or friend been traumatic or very difficult for you to handle?
- **Academic stress:** within the 12 months, have academics been traumatic or very difficult for you to handle?
- **Stress:** within the 12 months, how you rate the overall level of stress you have experienced?, measured in five categories (no stress, less than average stress, average stress, more than average stress, and tremendous stress)

RESULTS

1. International students showed a higher percentage of suicidal attempts but a lower percentage of suicidal ideation
2. The relationship-oriented factors were particularly influential to international students
3. Freshmen status increased the likelihood of thinking or attempting suicide for international students
4. All three abusive relationship variables, emotional, physical, and sexual abuse, were positively related to suicidal attempts
5. Academic stress was significantly associated with suicidal ideation, but not with suicidal attempts

TABLE 1. DESCRIPTIVE STATISTICS

VARIABLE	OVERALL		DOMESTIC STUDENT		INTERNATIONAL STUDENT	
	(N=104,548)		(N=95,304)		(N=9,244)	
	%	S.D.	%	S.D.	%	S.D.
SUICIDAL IDEATION	7.30	.26	7.44	.26	5.88	.24
SUICIDAL ATTEMPT	1.20	.11	1.19	.11	1.38	.12
AGE *	22.14	5.92	22.06	5.96	22.97	5.39
MALE	33.46	.47	32.64	.47	41.96	.49
SEXUAL ORIENTATION						
HETEROSEXUAL	90.94	.29	90.90	.29	91.41	.28
GAY/LESBIAN	2.78	.16	2.80	.17	2.42	.15
BISEXUAL	4.10	.20	4.15	.20	3.64	.19
UNSURE	2.18	.15	2.14	.15	2.53	.16
FRESHMAN	24.67	.43	25.12	.43	19.96	.40
ABUSIVE RELATIONSHIP						
EMOTIONAL ABUSE	8.93	.29	9.00	.29	8.20	.27
PHYSICAL ABUSE	1.97	.14	1.97	.14	1.95	.14
SEXUAL ABUSE	1.70	.13	1.73	.13	1.34	.12
SUBSTANCE ABUSE	16.35	.37	16.85	.37	11.23	.32
MENTAL HEALTH STATUS						
DEPRESSION	11.1	.31	11.36	.32	7.99	.27
STRESS **	3.52	.84	3.53	.83	3.32	.94
DEATH IN FAMILY/FRIEND	15.16	.36	15.47	.36	11.96	.94
ACADEMIC STRESS	44.45	.50	44.67	.50	41.14	.32
INTERNATIONAL STUDENT	8.84	.28				

* MEAN; ** MEAN STRESS

TABLE 2. THE RESULTS OF LOGISTIC REGRESSION ANALYSIS: **SUICIDAL IDEATION**

* <.001; **<.01	OVERALL		DOMESTIC STUDENT		INTERNATIONAL STUDENT	
	(N=104,548)		(N=95,304)		(N=9,244)	
VARIABLE	ODDS RATIO		ODDS RATIO		ODDS RATIO	
AGE	.95	***	.95	***	.97	**
MALE	1.36	***	1.38	***	1.14	
SEXUAL ORIENTATION						
GAY/LESBIAN	2.09	***	2.14	***	1.40	
BISEXUAL	2.46	***	2.48	***	2.30	***
UNSURE	2.66	***	2.64	***	2.85	***
FRESHMAN	1.25	***	1.26	***	1.12	
ABUSIVE RELATIONSHIP						
EMOTIONAL ABUSE	1.76	***	1.76	***	1.75	***
PHYSICAL ABUSE	1.31	***	1.29	***	1.61	
SEXUAL ABUSE	1.58	***	1.61	***	1.27	
SUBSTANCE ABUSE	1.42	***	1.42	***	1.45	**
MENTAL HEALTH STATUS						
DEPRESSION	4.58	***	4.54	***	5.39	***
STRESS	2.03	***	2.03	***	2.04	***
DEATH IN FAMILY/FRIEND	1.19	***	1.20	***	1.04	
ACADEMIC STRESS	1.81	***	1.81	***	1.77	***
INTERNATIONAL STUDENT	.99	***				
CONSTANT	.003	***	.003	***	.003	***
X ²	10192.61	***	9374.34	***	10192.61	***
LOG LIKELIHOOD	-22222.75		-20547.31		-22222.75	

TABLE 3. THE RESULTS OF LOGISTIC REGRESSION ANALYSIS: **SUICIDAL ATTEMPT**

* <.001; **<.01; ***<.05	OVERALL		DOMESTIC STUDENT		INTERNATIONAL STUDENT	
	(N=104,548)		(N=95,304)		(N=9,244)	
VARIABLE	ODDS RATIO		ODDS RATIO		ODDS RATIO	
AGE	.95	***	.95	***	1.01	
MALE	1.41	***	1.42	***	1.28	
SEXUAL ORIENTATION						
GAY/LESBIAN	1.99	***	2.02	***	1.91	
BISEXUAL	1.86	***	1.88	***	1.60	
UNSURE	2.53	***	2.51	***	2.27	*
FRESHMAN	1.63	***	1.61	***	1.75	*
ABUSIVE RELATIONSHIP						
EMOTIONAL ABUSE	1.94	***	1.97	***	1.79	*
PHYSICAL ABUSE	2.06	***	2.02	***	2.16	*
SEXUAL ABUSE	1.78	***	1.71	***	2.60	*
SUBSTANCE ABUSE	1.48	***	1.50	***	1.20	
MENTAL HEALTH STATUS						
DEPRESSION	5.63	***	5.75	***	4.77	***
STRESS	1.39	***	1.41	***	1.32	*
DEATH IN FAMILY/FRIEND	1.58	***	1.52	***	2.27	***
ACADEMIC STRESS	1.48	***	1.48	***	1.39	
INTERNATIONAL STUDENT	1.53	***				
CONSTANT	.002	***	.002	***	.001	***
X ²	2183.55	***	2004.29	***	2004.29	***
LOG LIKELIHOOD	-5719.14		-5132.51		-5132.51	

CONCLUSION/DISCUSSION

- First, international students showed a higher percentage of suicidal attempts compared to American (domestic) students. In contrast, international students showed a lower percentage of suicidal ideation. It seems that the suicidal attempt is a more serious issue for international students than suicidal ideation.
- Second, the suicidal ideation results offered the current prevention programs would work for international students, as the associated factors were similar to each other (foreign and domestic students). The only exception was depression; depression seemed to influence stronger to international students on suicidal thoughts.

CONCLUSION/DISCUSSION

- Third and the more profound results were from the suicidal attempt model. International students were more likely to attempt suicide than domestic students, although they were less likely to think about suicide. This implies that international students are strongly associated with actions than thoughts than domestic students in terms of suicide. Freshmen status increased the likelihood of attempting suicide for international students. Relationship-oriented factors such as abusive relationships and death in a family or friend, indeed played a critical role in international students' suicidal attempts. All three abusive relationship variables, emotional, physical, and sexual abuse, were positively significant. Moreover, the odds ratios of physical and sexual abuse in the suicidal attempt were higher than those of domestic students.

CONCLUSION/DISCUSSION

- The counseling or prevention effort should focus on international students' abusive relationship. Death in a family or friend increased the likelihood of attempting suicide, while it was insignificant in the suicidal ideation model. Unlike the suicidal ideation model, academic stress was not meaningfully associated with suicidal attempts for international students. Stress from academic work could give international students a hard time, yet not the suicidal attempt. This implies a suicidal attempt for international students is related to other factors and makes sense the results of an abusive relationship and a death in a family or friend.

Thank you

Any Questions?