

# ปัจจัยทำนายภาวะซึมเศร้าของนักศึกษาพยาบาลศาสตร์ในประเทศ สหรัฐอเมริกา ไทย ไต้หวัน และญี่ปุ่น

Depression and Its Predictors among Nursing Students in Four Countries:  
USA, Thailand, Taiwan and Japan

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## บทคัดย่อ

การวิจัยหาความสัมพันธ์ ณ ช่วงเวลาหนึ่งครั้งนี้ เพื่อเปรียบเทียบความแตกต่างระหว่างคะแนนภาวะซึมเศร้าในนักศึกษาพยาบาลศาสตร์ในประเทศสหรัฐอเมริกาไทยไต้หวัน และญี่ปุ่น และหาตัวทำนายภาวะซึมเศร้าของนักศึกษา แต่ละประเทศ โดยใช้แบบวัดภาวะซึมเศร้า (CES-D) แบบสอบถามรับรู้ความเครียด (PSQ) แบบวัดการมีคุณค่าในตนเอง (R-SE) และแบบวัดการได้รับการสนับสนุนทางสังคม (MSPSS) (ค่าความเชื่อมั่นสัมประสิทธิ์อัลฟาของครอนบาคระหว่าง .82 ถึง .93) เก็บข้อมูลระหว่างปี 2551 และ 2553 จากนักศึกษาพยาบาลศาสตร์ปี 3 และปี 4 ในวิทยาลัยพยาบาล 7 แห่ง ของประเทศสหรัฐอเมริกา 209 คน ประเทศไทย 156 คน ไต้หวัน 200 คน และ ญี่ปุ่น 372 คน รวมทั้งสิ้น 937 คน

ผลการวิจัยพบว่าภาวะซึมเศร้าของนักศึกษาฯ ทั้งสี่ประเทศมีความแตกต่างกันอย่างมีนัยสำคัญทางสถิติ ( $F = 5.96$ ,  $df = 935$ ,  $p < .001$ ) Bonferoni post-hoc ซึ่งให้เห็่นว่านักศึกษาฯ จากประเทศสหรัฐอเมริกามีภาวะซึมเศร้าสูงกว่านักศึกษาเอเชีย อย่างมีนัยสำคัญทางสถิติ ส่วนภาวะซึมเศร้าของนักศึกษา เอเชียไม่มีความแตกต่างเมื่อวิเคราะห์สถิติถดถอยพหุคูณพบว่าความเครียดเป็นตัวทำนายภาวะซึมเศร้าของนักศึกษาฯ ทั้งสี่ประเทศ ( $\beta_s = .40 - .59$ ,  $p < .001$ ) การมีคุณค่าในตนเองสามารถทำนายภาวะซึมเศร้าของนักศึกษาฯ อเมริกาและไทย ( $\beta_s = .24, .39$ ,  $p < .001$ ) ในขณะที่การสนับสนุนทางอารมณ์จากเพื่อนเป็นตัวทำนายภาวะซึมเศร้าในนักศึกษาพยาบาลไต้หวันและญี่ปุ่น อย่างมีนัยสำคัญทางสถิติ ( $\beta_s = .23, .15$ ,  $p < .05$ )

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ผลจากการศึกษา ควรมีการจัดโปรแกรมเพื่อลดระดับความเครียด แต่เพิ่มการมีคุณค่าในตนเอง และสนับสนุนให้มีการช่วยเหลือจากเพื่อนเพื่อภาวะซึมเศร้าในนักศึกษาพยาบาลศาสตร์ต่อไป

**คำสำคัญ :** นักศึกษาพยาบาลศาสตร์, ความเครียด, การสนับสนุนทางสังคม, การมีคุณค่าในตนเอง, ภาวะซึมเศร้า, การวิเคราะห์สถิติถดถอยพหุคูณ

## Abstract

This cross-sectional, correlational study examined the differences of depression scores between nursing students in the USA, Thailand, Taiwan, and Japan and predictors of depression in each country. A questionnaire packet was administered at seven nursing schools in the USA, Thailand, Taiwan, and Japan. Participants included 939 junior and senior undergraduate nursing students: 210 US, 156 Thai, 200 Taiwanese, and 373 Japanese.

Results showed that depression scores among nursing students in four countries were statistically different ( $F = 5.96, df = 935, p < .001$ ). Bonferroni post-hoc analysis indicated that US students had higher depression scores than Asian students. No score differences were detected among nursing students between the three Asian countries. Results from multiple regression show that stress predicted depression in nursing students in all countries. Self-esteem predicted depression in the USA and Thailand. Friend support predicted depression in Taiwan and Japan.

Programs that may help decrease stress and increase self-esteem and friend support should be established for nursing students in these four countries, based on results from this study.

**Keywords:** nursing students, stress, self-esteem, social support, depression, multiple regression

Nursing students are future health care professionals. Optimal educational preparation and a healthy mental state for nursing students can pave ways for them to become high quality nurses. However, research shows that nursing students experience tremendous stress from school and life circumstances (Mirzaei, Oskouie, & Rafii, 2012), and that can lead to depression (Ratanasiripong, 2012; Ross et al., 2005). Evidence shows that predictors of depression include stress, self-esteem, and emotional support (Ratanasiripong, 2012; Ross et al., 2005). Depression can be a consequence of stress, an interaction between an event and an individual's cognitive appraisal of the event (Lazarus & Folkman, 1984). While a situation may be perceived as stressful by one person, it can be perceived by another as non-stressful, thus resulting in different

mental health outcomes (Lazarus & Folkman, 1984). Previous research in Thailand found that emotional support was negatively associated with depression (Ratanasiripong, 2012; Ross et al., 2005). In the same studies, Thai nursing students who reported high self-esteem were found to experience less depression. The Sociometer theory proposes that individuals with low self-esteem tend to feel excluded from and rejected by their social groups and in turn are likely to report more mental health problems, including depression (Leary, 1999).

Although depression has been researched among nursing students in Thailand, to date, no study has examined predictors of depression among nursing students across cultures. Thus, the objectives of this study among US, Thai, Taiwanese, and Japanese nursing students were to examine the differences of

depression scores between countries and the predictors of depression in each country. Results from our study can add new knowledge to the field and help nursing faculty and administrators to design appropriate interventions specific to each country to prevent or lessen depression among nursing students.

## Methods

### Methodology and Participants

A correlational, cross-sectional study was conducted among 939 junior and senior undergraduate nursing students in the USA, Thailand, Taiwan, and Japan between 2008 and 2010. Seven ethical committees in four countries approved the study protocol.

### Data collection

Using convenience sampling, data were collected among 210 students in two US schools, 156 students in a Thai school, 200 students in a Taiwanese school, and 373 students in two Japanese schools. The number of schools and participants in each country is entirely based on the personal connection our research team had with the schools. An announcement was made by a researcher at each site at the end of junior and senior classes about the study's objectives, protocol, and risks and benefits. Students who decided to participate signed an informed consent, stayed after class, and filled out a questionnaire packet (with back translation), taking approximately 10-15 minutes of the students' time. No identifiable data were used in the study. The completed questionnaires were placed by the participants in a box provided at the door of each class room. The questionnaire packet comprised a demographic questionnaire (created by the research team) and Structured, reliable, and valid tools which have been used widely in various populations (Ross et al., 2005; Ross, Sawatphanit, Mizuno, & Takeo, 2011).

### Study Variables: Dependent variable.

Depression is defined as an individual's overall perception of her negative affect, somatic complaints, and troublesome relationships. The Center for Epidemiology Studies Depression Scale (CES-D) (Radloff, 1977), a 20 item, structured, self-report was used to assess depression among nursing students during their past seven days. Students were asked to respond to the items based on feelings or behavior ranging from "rarely or none of the time" (0) to "most or all of the time" (3). Possible total scores range from 0 to 60. Higher total scores indicate more depression (Radloff, 1977). Alphas of the tool ranged from .83 to .90 by country. **Independent variables.** *Stress* is defined as an overall emotional response of an individual to stressful situations. The response includes a sense of being harassed, overloaded, irritable, joyless, fatigued, worried, and tense. The Perceived Stress Questionnaire (PSQ) (Levenstein et al., 1993) is a 30-item, 4-point Likert questionnaire used to measure stress. Responses range from "lowest level of perceived stress" (0) to "highest level of perceived stress" (3). Possible total scores range from 0 to 90. Higher scores indicate more stress. Alphas ranged from .83 to .91 by country.

*Self-esteem* is defined as a perception of an individual about her overall self-worth as appraised in relation to others. The Rosenberg Self-esteem Scale (R-SE) (Rosenberg, 1989) is a 10 item, 4-point Likert, self-report scale used to measure self-esteem. Responses range from "strongly disagree" (1) to "strongly agree" (4). Possible total scores range from 10 to 40. Higher scores indicate higher self-esteem. Alphas ranged from .82 to .85 by country.

*Emotional support* is defined as an overall perception of an individual about love and caring she receives from her family, friends, and significant other. The Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet, Dahlem, Zimet, & Farley,

1988) is a 12-item, 7-point Likert self-report scale used to measure different sources of emotional support with 4 items each for the sources of family, friends and significant other. Responses range from “very strongly disagree” (1) to “very strongly agree” (7). Total sub-scale scores can range from 4 to 28. Higher scores indicate more perceived support. Alphas ranged from .91 to .93 by country.

**Sample Size.** Using G\*Power 3.1 (Faul, Erdfelder, Buchner, & Lang, 2009) with multiple regression (fixed model, R2 increase), the number of predictors as 6, a power of .95, a medium effect size

of 0.15, and alpha of .05, a sample size of 129 was generated for each country.

**Statistical Analyses.** Frequencies, percentages, means, standard deviations, One-way ANOVA, and simultaneous multiple regression were used. For parsimony, before running multiple regression, either Chi-square or Pearson’s r was run for the whole sample to check for the associations between depression and demographic variables and depression and a history of depression. Only a history of depression was a significant predictor of depression and was included in the final analysis.

## Results

**Table 1**  
*Students’ Demographics, Perception of Nursing Profession Prestige, and History of Depression by Country*

	USA		Thailand		Taiwan		Japan		Total	
	n	%	n	%	n	%	n	%	n	%
<b>Gender</b>										
Female	(209)		(156)		(194)		(372)		(931)	
Male	180	86.1	147	94.2	192	99.0	331	89.0	850	91.3
<b>Year</b>										
Junior	29	13.9	9	5.8	2	1.0	41	11.0	81	8.7
Senior	(203)		(156)		(200)		(369)		(928)	
Junior	124	61.1	89	57.1	102	51.0	142	38.5	457	49.2
Senior	79	38.9	67	42.9	98	49.0	227	61.5	471	50.8
<b>Person(s) decided for student to enter nursing program (some chose &gt; 1 category)</b>										
Self	(211)		(155)		(258)		(202)		(740)	
Parents	203	96.2	70	45.2	126	48.8	160	79.2	559	75.5
Others (e.g., relatives)	5	2.4	54	34.8	100	38.8	22	10.9	181	24.5
<b>Previous degree</b>										
No	3	1.4	31	20.0	32	12.4	20	9.9	86	11.6
Yes	(207)		(156)		(197)		(372)		(932)	
No	133	64.3	154	98.7	191	97.0	359	96.5	837	89.8
Yes	74	35.7	2	1.3	6	3.0	13	3.5	95	10.2
<b>Make ends meet</b>										
No	(206)		(155)		(195)		NA	NA	(556)	
Yes	24	11.7	73	47.1	73	37.4	NA	NA	170	30.6
<b>Clinical experience</b>										
No	182	88.3	82	52.9	122	62.6	NA	NA	386	69.4
Yes	(205)		(156)		(199)		(371)		(931)	
No	82	40.0	137	87.8	174	87.4	360	97.0	753	80.9
Yes	123	60.0	19	12.2	25	12.6	11	3.0	178	19.1
<b>Family status</b>										
Single/divorced/widow	(205)		(156)		(200)		(358)		(919)	
Married	126	61.5	156	100	199	99.5	357	99.7	838	91.2
<b>Have children</b>										
No	79	38.5	0	-	1	0.5	1	0.3	81	8.8
Yes	(204)		(156)		(200)		(372)		(932)	
No	159	77.9	156	100	192	96.0	368	98.9	875	93.9
Yes	45	22.1	0	-	8	4.0	4	1.1	57	6.1
<b>History of depression</b>										
No	(208)		(156)		(180)		(368)		(912)	
Yes	165	79.3	152	97.4	171	95.0	199	54.1	687	75.3
<b>Perception of nursing profession prestige</b>										
Not prestigious	43	20.7	4	2.6	9	5.0	169	45.9	225	24.7
Somewhat prestigious	(209)		(156)		(200)		(369)		(934)	
Prestigious	22	10.5	0	0	82	41.0	122	33.1	226	24.2
Somewhat prestigious	67	32.1	12	7.7	95	47.5	179	48.5	353	37.8
Prestigious	120	57.4	144	92.3	23	11.5	68	18.4	355	38.0

Table 1 shows nursing students’ demographic data, their perception of the nursing profession’s prestige, and their history of depression, by country. Only 12% of US students experienced financial difficulty, while 30-47% of Asian students did so.

About half of Japanese nursing students reported a history of depression, while one out of five US students and even fewer Thai and Taiwanese students reported such a history.

Table 2

Mean Total Scores and Standard Deviations of Depression, Stress, Self-esteem, Family Support, Friend Support, and Significant Other Support by Country

	n	Depressive symptoms		Stress		Self-esteem		Family support		Friend support		Significant other support	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
		USA	210	23.0	6.92	41.7	10.47	25.9	1.94	22.6	5.21	22.7	4.66
Thailand	156	20.1	9.08	48.0	11.22	30.6	3.81	24.6	4.48	21.3	4.88	22.2	4.97
Taiwan	200	21.1	7.11	37.6	9.21	28.2	2.40	21.2	4.42	21.5	3.98	21.2	4.43
Japan	373	20.8	6.61	71.2	12.15	25.5	2.31	21.9	5.46	21.6	5.16	21.5	5.31

Table 2 shows, by country, the mean total scores of depression, stress, self-esteem, family support, friend support, and significant other support. US students had the highest depression score, followed by Taiwanese, Japanese, and Thai students. The highest stress level was found in Japanese students, followed by Thai, US, and Taiwanese nursing students. Students in all four countries reported similar levels for self-esteem and the three sources

of emotional support. Results of a One-Way ANOVA analysis show that depression scores were statistically significant among US, Thai, Taiwanese, and Japanese students ( $F = 5.96, df = 935, 3, p < .001$ ). Bonferoni post-hoc analyses indicate that US students had higher depression scores than Thai, Taiwanese, and Japanese students. However, no depression score differences were detected among nursing students between the three Asian countries.

Table 3

Predictors of Depression in Each Country Using Simultaneous Multiple Regression

Predictor	Country											
	USA (n = 194)			Thailand (n = 155)			Taiwan (n = 179)			Japan (n = 344)		
	b	SE	$\beta$	b	SE	$\beta$	b	SE	$\beta$	b	SE	$\beta$
History of depression	3.698	.971	.217***	.907	3.167	.016	3.161	2.168	.096	1.396	.518	.105*
Stress	.265	.039	.404***	-.362	.052	-	.375	.053	.476***	.323	.021	.596***
Self-esteem	.861	.209	.239***	-.918	.159	-	-.140	.199	-.048	.055	.108	.019
Family support	-.109	.086	-.082	-.201	.138	-.099	-.114	.139	-.071	-.065	.058	-.054
Friend support	.019	.094	.013	-.186	.134	-.100	-.417	.178	-.232*	-.191	.078	-.149*
Significant other support	-.105	.078	-.085	.254	.137	.139	.040	.158	.025	-.054	.077	-.044
Adjusted R <sup>2</sup>	.383			.543			.253			.483		
F test	22.4***			30.6***			11.1***			58.2***		

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

### Discussion and Implications

Our study revealed that none of the demographic characteristics were predictors of depression in each country. A history of depression and stress were found to be significant predictors of depression among nursing students in the USA and Japan. These

findings are consistent with the National Institute of Mental Health's (2012) recommendation that college students should be screened for depression and a history of depression. Nursing students in all countries who experienced more stress reported more depression. These findings are in line with previous

studies among nursing students in Thailand (Ratanasiripong, 2012; Ross et al., 2005) and China (Ni et al., 2010). Thus, screening for stress levels in nursing students in the USA, Thailand, Taiwan, and Japan may help faculty to identify students who are under overwhelming stress and find ways to decrease their stress before it progresses into depression.

Recommendations and assistance should be offered to highly stressed students to decrease their stress levels. Psychological counseling and stress reduction programs should also be offered to these students. In the USA, such counseling and programs are common and are readily available at many institutions. Yet, this is not the case for Thailand, Taiwan, and Japan. Asians tend to seek psychological assistance less than Westerners, partly due to the belief that such assistance is only for people with psychosis (Ross et al., 2011). Also, most Thai and Japanese are Buddhists whose belief involves the cultivating or the training of mindful concentration (Bullen, 2012; Ross & Ross, 2012). In Buddhism, stress is driven by one's untrained attention. To escape from such suffering, one needs to cultivate one's mind to dispel it. For Confucian Taiwanese, stress/mental illness is perceived as a disharmony of emotions, a major stigma (Dufresne, 2012). Traditional beliefs in Japan also hold stress/mental illness to be unreal (Kramer et al., 2002). traditional Thai, Taiwanese, and Japanese believe that a mental illness is caused by evil spirits (Kramer et al., 2002). Thus, our Asian participants may seek help solely through traditional healers (Kramer et al., 2002). Thus, it is necessary that nursing faculty and administrators in Thailand, Taiwan, and Japan take their students' cultural context and beliefs into account when helping them to deal with stress or mental disorders.

Among nursing students in the USA and Thailand, our findings showed that self-esteem

predicted depression. This finding is congruent with previous studies in nursing students in Thailand (Ratanasiripong, 2012; Ross et al., 2005). In the past, self-esteem was considered a static trait, but recent theoretical and empirical evidence shows that self-esteem is, in fact, dynamic (Leary, 1999; Robins, Trzesniewski, Tracy, Gosling, & Potter, 2002). This relatively new belief has a significant implication for decreasing mental health disorders across the life span. Because enhancing one's self-esteem does not work in "a single-person vacuum" (Peopletriggers, 2010), self-esteem-enhancing programs offered to our US and Thai nursing students should include not only recreational or outward-bound activities, but also aspects that focus on the enhancement of social, problem-solving, and self-control skills (Leary, 1999). Nursing faculty and administrators should establish such programs to help their students. For nursing students in Taiwan and Japan, friend support predicted depression. In Taiwan, a large number of students do not attend college in their home town. Thus, friends become a necessary part of their support system. Establishing a peer support program in nursing schools can be helpful in Japan and Taiwan.

### Limitations

The CES-D is not a diagnostic tool. Thus, depression rates in our study are not to be misinterpreted as reflecting clinical depression. Also, without qualitative data, different depression scores of nursing students in countries and cultural contexts as related to depression cannot be explained by our study. Future research should collect longitudinal quantitative data along with qualitative data in the target populations. Finally, including a depression diagnostic tool and clinical diagnosis by qualified practitioners will help identify clinically depressed cases for early treatment.

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