



ANXIETY IN DANE COUNTY YOUTH

CONSISTENT WITH STATEWIDE AND NATIONAL TRENDS FOR ADOLESCENTS AND YOUNG ADULTS, MIDDLE SCHOOL AND HIGH SCHOOL STUDENTS IN DANE COUNTY HAVE REPORTED INCREASING LEVELS OF ANXIETY AND OTHER RELATED MENTAL HEALTH ISSUES IN RECENT YEARS.

While the direct causes of this increase are unknown, and research is currently being conducted across the country to better understand these causes, the Dane County Youth Assessment (DCYA) provides locally-relevant data on factors that are associated with higher levels of anxiety. Understanding these related factors is important for raising awareness among schools, families, and communities about which youth might be at risk for experiencing higher levels of anxiety and other negative mental health outcomes.

Additionally, these associated factors may be helpful for targeting mental health interventions and providing mental health resources to the students in Dane County who are most at risk. In terms of demographics, these students include girls, those who identify as lesbian, gay, bisexual, or questioning their sexual identity, and transgender students. Students in Dane County who do not feel strong connections to others, experience or witness bullying and harassment, and report behaviors indicative of alcohol and other drug addiction also report higher levels of anxiety.

OVERVIEW

Since 1980, the Dane County Youth Commission has coordinated an effort to survey middle and high school youth to collect data on health, school, risk and positive behavioral trends. In 2015 16 Dane County public school districts and one private high school participated, with over 21,500 middle and high school students completing a health and risk survey about their experiences at home, in school and in their communities.

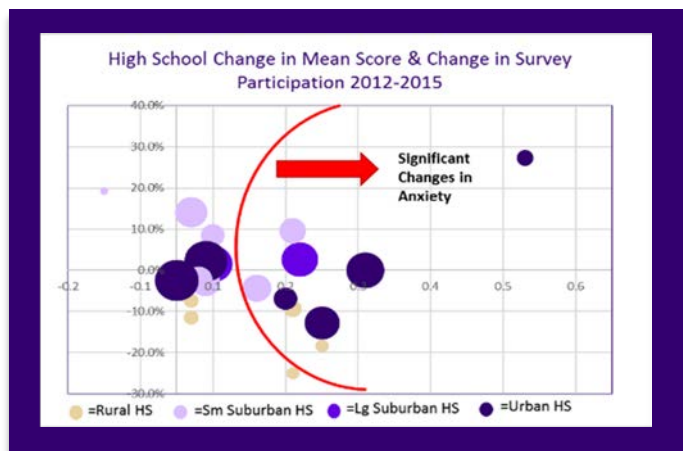
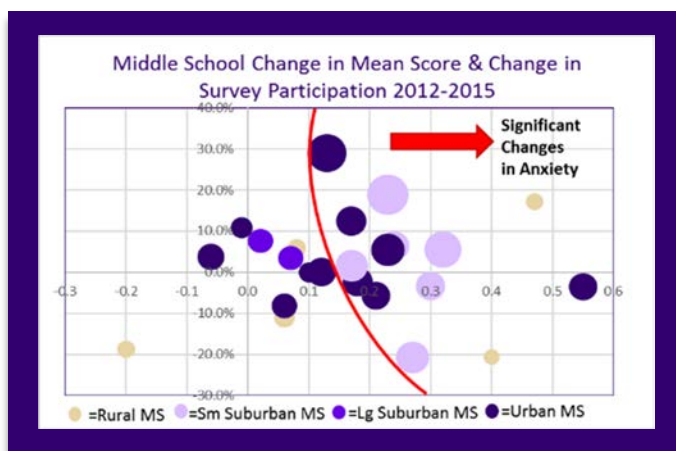
Survey topics include level of school engagement, use of free time, health and nutrition, mental health, family relationships, alcohol and drug use, other risk behaviors, and more. Dane County middle school and high school youth report similar increases in anxiety from 2012 using the Generalized Anxiety Disorder Scale, a tool commonly used to assess anxiety.

21,558 Students
50 Middle & High Schools
16 public school districts & 1 private high school

Comparing the average response on the DCYA anxiety scale from 2012 to 2015, Boston University Professor Melissa Holt and researcher Katharine Parodi found significant increases for both middle school and high school students in Dane County.

Students at 21 of the 24 participating middle schools reported an increase in the average anxiety score from 2012 to 2015. Students at 14 middle schools reported *statistically significant* increases in anxiety.

Holt and Parodi also found that students at 17 out of 20 participating high schools reported an increase in the anxiety score while students at 9 schools reported a *statistically significant* increase.



National & State Trends

Nationwide, anxiety is becoming a significant emotional health issue for young people starting in middle school and continuing through college. Dr. Robert Leahy, a psychologist at the American Institute for Cognitive Therapy reports that "The average high school student today has the same level of anxiety as the average psychiatric patient in the early 1950s" (Slate 2011). The Center for Collegiate Mental Health at Penn State studied 100,000 college students in 2015 finding that, "anxiety has now surpassed depression as the most common mental health diagnosis among college students, though depression, too, is on the rise."

A recent article in the Milwaukee Journal-Sentinel highlights Wisconsin data from the 2015 American College Health Association-National College Health Assessment II:

Anxious? Deeply Depressed? More students saying yes. Milwaukee Journal Sentinel. May 12, 2016

"Almost one-third of the students in the UW System experienced clinically significant mental health symptoms over a 12-month period, measured by mental health screening instruments from the National College Health Assessment in early 2015.

John Achter, a psychologist and interim associate dean of students at UW-Stout, told the UW Board of Regents that, "anxiety has really leapfrogged depression in recent years" He continued that, "Over half of our students report overwhelming anxiety in a given year," noting that colleges have been paying more attention to mental health issues since school shootings at Virginia Tech in 2007 and Northern Illinois University in 2008.

Nearly 10% of all UW System students per year seriously consider suicide. The survey suggests that just over 1% or approximately 2,000 students make a suicide attempt."

Dane County Trends

In 2015, over 20,000 youth living in Dane County completed a health/risk survey about their experiences at home, in school and in their communities. Survey topics include level of school engagement, use of free time, health and nutrition, mental health, family relationships, alcohol and drug use, other risk behaviors, and more. Dane County middle school and high school youth report similar increases in anxiety from 2012 based on a 3 item subscale (see Appendix: Table 1). These items were taken from a tool commonly used to assess anxiety, the Generalized Anxiety Disorder Scale.

Comparing the average response on the DCYA anxiety scale from 2012 to 2015, Boston University Professor Melissa Holt and researcher Katharine Parodi found significant increases for

both middle school and high school students in Dane County. Students at 21 of the 24 participating middle schools reported an increase in the average anxiety score from 2012 to 2015. Students at 14 middle schools reported *statistically significant* increases in anxiety (see Appendix: Table 2). Holt and Parodi also found that students at 17 out of 20 participating high schools reported an increase in the anxiety score while students at 9 schools reported a *statistically significant* increase (see Appendix: Table 3).

Who is experiencing higher levels of anxiety?

Although reported anxiety levels have increased in most demographic subgroups, there is a larger increase for students identifying as female, gay, lesbian, bisexual, questioning their sexual orientation, and transgender. These student subgroups reported the highest anxiety levels with the first measurement in 2012 and experienced a greater increase in 2015.

Higher levels of anxiety among female students in Dane County compared to male students is consistent with 2015 National College Health Assessment where 90% of female undergraduate college students reported feeling "overwhelmed by all they had to do" in the last 12 months compared to 76% of males.¹

In contrast to gender, there is not as much variation across racial and ethnic groups. African American students report the lowest levels of anxiety, but across the largest racial and ethnic groups in Dane County, there is no *statistically significant* difference on this scale.

Preliminary analysis by Holt & Parodi did find *statistically significant* increases in levels of anxiety for African American, Hispanic and White students from 2012 to 2015 (see Appendix: Tables 4 and 5). Of the four largest racial and ethnic groups in the county, only Asian students reported a *non-statistically significant* increase.

STUDENTS REPORTING "OFTEN" OR "ALWAYS" FEELING ANXIOUS

Middle School Anxiety Levels	19%	26%
High School Anxiety Levels	25%	32%

High School Demographic Groups	2012 Survey	2015 Survey
All	25%	32%
Male	19%	20%
Female	33%	43%
African American	26%	34%
Hispanic	29%	31%
White	25%	30%
LGBQ	52%	62%
Transgender	53%	62%

¹ American College Health Association. (2015). *National College Health Assessment II*. Retrieved from: http://www.acha-ncha.org/pubs_rpts.html

Holt and Parodi's analysis also identified *statistically significant* increases in levels of anxiety from 2012 to 2015 for some Dane County schools (see Appendix: Tables 2 and 3). Currently, they are looking for possible school and community characteristics that might explain why some schools saw larger increases in anxiety levels from 2012 to 2015, such as changes in academic outcomes, shifts in the proportion of racial and ethnic subgroups in schools and communities, and socioeconomic shifts.

The relevant issues fell into:

- > Emotional health issues
- > Connection to others
- > School performance
- > Gender identity
- > Issues of harassment or bullying
- > Alcohol and other drug addiction

The twenty characteristics listed below all have a *statistically significant* correlation with higher levels of anxiety among high school students. Of the more than 120 items in the DCYA survey, these are among the most highly correlated. The higher the correlation value, the more likely that a characteristic is associated with anxiety.

STATISTICALLY SIGNIFICANT RESULTS CORRELATING WITH ANXIETY ON SURVEY		
Category	Characteristic	Correlation with Anxiety
Emotional Health Issues	Depression	0.534
	Anxiety as a long term issue (> the past 30 days)	0.52
	Suicide ideation	0.454
	Cutting, self-harm	0.399
	Low sense of self-efficacy	0.319
	Disagree with the statement, "I am usually confident about the decisions I make."	0.317
	Use mental health services outside of school	0.287
	Attempted suicide	0.268
Connection to Others	Disagree with the statement, "I feel like I belong at this school."	0.317
	Disagree with the statement, "I feel connected to school."	0.293
	Disagree with the statement, "I feel close to people at my school."	0.26
	Disagree with the statement, "I feel safe at my school."	0.246
	Responded with a number lower than the average response to the question, "Not counting parents, how many adults can you rely on for help?"	0.221
School Performance	Disagree with the statement, "I can ask my neighbors for help."	0.208
	Agree with the statement, "I struggle getting my homework done."	0.26
Gender Identity	Female	0.29
	Responded on the "Feminine" side of the scale to the question, "How students would describe you?" with a scale ranging from masculine to feminine*	0.253
Bullied & Harrassed	Bullied or harassed about appearance	0.304
	Bullied or harassed through the internet or text messaging	0.294
	Received unwanted sexual comments	0.27
	Bullied at all	0.243
	Picked on by other students	0.243
	Made fun of by other students	0.24
	Observed students bullying other students at school	0.218
Alcohol & Drug Addiction	Called names by other students	0.218
	Used alcohol or other drugs to relax or "feel better about yourself"	0.265
	CRAFT Addiction Scale	0.235
	Used alcohol or other drugs when alone	0.215

* This question was intended to provide insight into how others perceive a student's gender identity or gender expression, regardless of how the student reported their own gender identity.

Dane County High School Racial or Ethnic Groups (2015)	Asian (n = 695)	African American (n = 1523)	Hispanic (n = 1,534)	White (n = 12,256)
% of students reporting "Often" or "Always" feeling anxious	29%	24%	31%	30%

What might be the cause?

The causes of increased levels of anxiety in youth are most likely interrelated and very challenging to singularly identify. However, Professor Jean Twenge at the University of San Diego analyzed 63,000 high school and college students from Minnesota using a multi-phasic personality inventory and drew two broad conclusions:

- *Students today report feeling significantly more isolated, misunderstood, and emotionally sensitive or unstable than in decades past. Teens were also more likely to be narcissistic, have low self-control, and express feelings of worry, sadness, and dissatisfaction with life.*
- *These results may suggest that American culture has increasingly valued extrinsic and goals such as money and status, while increasingly devaluing community, affiliation, and finding meaning in life.²*

The 2015 National College Health Assessment data for college undergraduates asked students to rank traumatic or tough-to-handle issues over the last twelve months. This ranking shows that academics and finances are the top "tough-to-handle" issues.

Traumatic or "Tough-to-Handle" Issues	Females	Males
Academic	49%	38%
Finances	40%	30%
Intimate relationships	32%	27%
Sleep difficulties	31%	25%
Family problems	33%	19%
Personal appearance	33%	18%

A number of individual, school, peer, family, and community characteristics had a *statistically significant* correlation with anxiety in the DCYA 2015 data shedding some light on the rise in anxiety for Dane County students. Although correlation is not necessarily causation, it does suggest that issues are related, and provides information about the students who are more likely to be experiencing high levels of anxiety.

² Twenge, J.M. et al., "Birth cohort increases in psychopathology among young Americans, 1938–2007: A cross-temporal meta-analysis of the MMPI" *Clinical Psychology Review*, Volume 30, Issue 2, March 2010

CONCLUSION

Young people of all ages are reporting higher levels of anxiety, and a comparison of the DCYA data from 2012 and 2015 is consistent with national anxiety trends for adolescents and young adults.

The DCYA data suggests that anxiety is related to other emotional health issues like depression, low self-efficacy, self-harm, and suicide ideation. Whether these co-occurring issues, are causal issues or by-products of anxiety is not clear. Issues of low self-efficacy supports other research that students feel helpless and unable to control the outcomes in their lives. This level of hopelessness could certainly also fuel depression and suicidal ideation.

At the college level, students report academics as the highest stress inducer. For Dane County students, there is also a strong correlation between those who struggle to complete their school work and anxiety. The 2018 DCYA will include additional items on school performance to further explore this issue.

Girls and young women report disproportionately higher levels of anxiety as do gay, lesbian, bisexual, and transgender youth who participated in the 2015 DCYA. There is some indication anxiety may be increasing more sharply for students of color but no *statistically significant* difference across racial and ethnic groups were observed in the 2015 DCYA data.

The 2015 DCYA data indicates that disconnection from others may be one of the roots of anxiety, as is also suggested in the analysis by Dr. Twenge of data from Minnesota youth. For Dane County students, feeling disconnected at school and in their neighborhoods as well as experiences of bullying and harassment directed at themselves and others are associated with higher levels of anxiety.

Also, interesting are the factors that are NOT correlated with anxiety in the 2015 DCYA including grades, participation in extracurricular activities, sleep, and receiving free or reduced lunch (as a proxy for family income and socioeconomic status). Other characteristics were correlated with anxiety, but at lower levels, such as not having access to a desired career pathway, connection with parents or guardians, adverse childhood experiences, and food insecurity. These characteristics may require further research.

TECHNICAL NOTES

Throughout this document, the terms *statistical significance* and *statistically significant* are used to describe differences in survey results between years or across various groups of students. While any differences in data collected through the DCYA may reflect real changes experienced by Dane County students, *statistically significant* differences suggest that data is more likely reflecting real changes. In other words, it is very unlikely that random chance led to the differences observed over time or across groups.

In the Appendix, Tables 2-5 are highly technical. This information is also presented in narrative form and reviewing the tables is not necessary for understanding this report. However, the tables are provided for those interested in a more technical understanding of the analyses used for this report. The following abbreviations are used in these tables, and explained below:

- > n = number of students
- > M = mean, or average
- > SD = standard deviation, which reflects potential variation in the mean (M) due to data limitations
- > A p -value or probability value, is used to assess *statistical significance*. The smaller the p-value, the more *statistically significant* the finding. For this type of analysis, any p-value less than 0.05 is typically considered *statistically significant*.

PROJECT PARTNERS

The Dane County Youth Assessment has occurred since 1980 and currently takes place every 3 years. Funded from a variety of public agencies, its design is a collaboration by a steering committee, comprised of partner organizations, community stakeholders and Dane County Human Services staff.

Copies of the survey are made available at participating schools for parent/guardian preview prior to administration. They provide passive consent and may opt their child out of participating.

The survey was administered by K12 Associates, LLC from January to March 2015. Administered through a secure, on-line platform, all responses are confidential. For more survey information please visit: danecountyhumanservices.org/yth/



RESEARCH PARTNERS

Melissa K. Holt, Ph.D. is an Associate Professor of Counseling Psychology at Boston University's School of Education, and a licensed Psychologist. She previously served as a Behavioral Scientist at the Centers for Disease Control and Prevention in the Division of Violence Prevention. Dr. Holt has authored 42 peer reviewed journal articles and 13 book chapters, has co-edited one book on school mental health, and is the co-author of a forthcoming book on peer victimization. Dr. Holt has received funding from the National Institutes of Justice, the Sports Museum of New England, and Boston University's School of Education to support her research.

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Appendix

TABLE 1 – Dane County Youth Assessment (DCYA) Anxiety Scale

In the past 30 days, how often have you felt:

Felt nervous, anxious or on edge.

Not been able to stop or control worrying.

Felt problems were piling up so high that you could not handle them.

Response options: Always, Often, Sometimes, Not at all

TABLE 2 – DCYA Middle School Anxiety Scores

Analysis provided by Dr. Melissa Holt, Boston University

District	2012 n	M (SD)	2015 n	M (SD)	Change in Mean Scores (* changes are significant)
Lg Suburban	223	1.85 (.81)	240	1.87 (.79)	.02
Lg Suburban	230	1.86 (.82)	238	1.93 (.82)	.07
Rural	149	1.97 (.84)	121	1.77 (.84)	-.20
Rural	119	1.69 (.69)	126	1.77 (.81)	.08
Sm Suburban	333	1.73 (.71)	322	2.03 (.85)	.30***
Rural	171	1.97 (.87)	152	2.03 (.84)	.06
Rural	99	1.55 (.74)	116	2.02 (.87)	.47***
Sm Suburban	398	1.78 (.83)	404	1.95 (.84)	.17**
Rural	121	1.70 (.73)	96	2.10 (.97)	.40**
Sm Suburban	326	1.70 (.72)	347	1.94 (.85)	.24***
Sm Suburban	525	1.81 (.81)	624	2.04 (.95)	.23***
Sm Suburban	521	1.75 (.77)	413	2.02 (.89)	.27***
Sm Suburban	487	1.75 (.77)	514	2.07 (.83)	.32***
Urban	259	2.04 (.93)	238	2.10 (.96)	.06
Urban	297	1.83 (.81)	334	2.00 (.88)	.17*
Urban	331	1.85 (.80)	312	2.06 (.94)	.21*
Urban	442	1.79 (.64)	570	1.92 (.81)	.13*
Urban	346	1.75 (.71)	338	1.93 (.81)	.18*
Urban	307	1.76 (.75)	296	2.31 (.95)	.55***
Urban	400	1.84 (.78)	422	2.07 (.86)	.23***
Urban	263	2.01 (.89)	273	1.95 (.79)	-.06
Urban	158	1.97 (.84)	175	1.96 (.81)	-.01
Urban	280	1.87 (.84)	321	1.99 (.91)	.12
Urban	157	1.85 (.71)	157	1.95 (.86)	.10
Overall MS	7614	1.81 (.78)	9426	1.98 (.86)	.17***

Note: Codes range from 1-4 for the three anxiety sub-scale questions:

(1) Not at all (2) A little (3) Often (4) Always.

* p < .05. ** p < .01. *** p < .001.

Appendix

TABLE 3 – DCYA High School Anxiety Scores

Analysis provided by Dr. Melissa Holt, Boston University

District	2012		2015		Change in Mean Scores (* changes are significant)
	n	M (SD)	n	M (SD)	
Lg Suburban	1482	2.08 (.85)	1504	2.13 (.90)	.05
Lg Suburban	1308	1.93 (.78)	1342	2.10 (.84)	.17***
Rural	243	2.04 (.82)	225	2.06 (.93)	.02
Rural	251	2.03 (.89)	222	2.01 (.88)	-.02
Sm Suburban	525	2.06 (.83)	570	2.11 (.90)	.05
Rural	353	1.99 (.80)	320	2.15 (.89)	.16*
Sm Suburban	57	2.57 (.88)	68	2.47 (.99)	-.10
Rural	229	1.84 (.77)	187	2.04 (.85)	.20*
Rural	224	2.09 (.93)	168	2.25 (.93)	.16
Sm Suburban	751	2.00 (.80)	734	2.03 (.89)	.03
Sm Suburban	656	1.90 (.75)	719	2.06 (.89)	.16***
Sm Suburban	910	2.03 (.87)	883	2.07 (.87)	.04
Sm Suburban	888	1.96 (.83)	849	2.07 (.85)	.11**
Sm Suburban	917	1.99 (.85)	1046	2.01 (.86)	.02
Urban	592	1.93 (.77)	551	2.08 (.84)	.15**
Urban	1466	1.98 (.83)	1466	2.24 (.86)	.26***
Urban	1795	2.02 (.80)	1834	2.06 (.90)	.04
Urban	2005	2.10 (.86)	1956	2.10 (.88)	.00
Urban	1439	1.88 (.85)	1254	2.08 (.93)	.20***
Urban	223	1.70 (.64)	284	2.18 (1.03)	.48***
Overall HS	17687	2.00 (.83)	17778	2.11 (.89)	.11***

Note: Codes range from 1-4 for the three anxiety sub-scale questions:

(1) Not at all (2) A little (3) Often (4) Always.

* p < .05. ** p < .01. *** p < .001.

Appendix

TABLE 4 – DCYA Middle School Anxiety Scores by Demographics

Analysis provided by Dr. Melissa Holt, Boston University

Demographics	Anxiety Scale Assessments				Change in Mean Scores (* changes are significant)
	2012		2015		
	n	M (SD)	n	M (SD)	
Gender:					
<i>Female</i>	3725	1.94 (.83)	4739	2.19 (.92)	.25***
<i>Male</i>	3855	1.69 (.72)	4628	1.78 (.75)	.09***
Race/Ethnicity:					
<i>White</i>	4873	1.78 (.75)	6073	1.95 (.83)	.17***
<i>Black</i>	895	1.77 (.80)	835	2.05 (.95)	.28***
<i>Latino</i>	632	1.86 (.84)	910	2.03 (.95)	.17***
<i>Hmong</i>	119	2.03 (.89)	169	2.07 (.85)	.04
<i>Asian, not Hmong</i>	266	1.81 (.77)	329	1.89 (.74)	.08
<i>Native American</i>	53	1.92 (.89)	83	2.13 (.98)	.21
<i>Middle Eastern</i>	47	2.02 (.80)	87	2.10 (.84)	.08
<i>Multi-Racial</i>	504	1.96 (.86)	729	2.10 (.91)	.14**
<i>Other</i>	191	1.98 (.78)	139	2.09 (.92)	.11
Sexual Orientation:					
<i>Heterosexual</i>	6953	1.77 (.76)	8129	1.92 (.82)	.15***
<i>Gay or Lesbian</i>	42	2.59 (1.20)	66	2.88 (.98)	.29
<i>Bi-sexual</i>	170	2.62 (.91)	368	2.78 (.92)	.16
<i>Questioning</i>	212	2.26 (.85)	261	2.50 (.91)	.24**

Note: Codes range from 1-4 for the three anxiety sub-scale questions: (1) Not at all (2) A little (3) Often (4) Always.

* p < .05. ** p < .01. *** p < .001.

Appendix

TABLE 5 – DCYA High School Anxiety Scores by Demographics

Analysis provided by Dr. Melissa Holt, Boston University

Demographics	Anxiety Scale Assessments				Change in Mean Scores (* changes are significant)
	2012		2015		
	n	M (SD)	n	M (SD)	
Gender:					
<i>Female</i>	8883	2.17 (.85)	8976	2.38 (.90)	.21***
<i>Male</i>	8755	1.83 (.77)	8745	1.82 (.79)	-.01
Race/Ethnicity:					
<i>White</i>	12787	2.00 (.83)	12240	2.10 (.87)	.10***
<i>Black</i>	1102	1.92 (.83)	1531	2.12 (.92)	.20***
<i>Latino</i>	1032	1.98 (.83)	1522	2.00 (.94)	.02
<i>Hmong</i>	284	2.01 (.86)	348	2.25 (.92)	.24**
<i>Asian, not Hmong</i>	489	2.08 (.84)	685	2.08 (.87)	.00
<i>Native American</i>	91	1.89 (.80)	86	2.14 (.96)	.25
<i>Middle Eastern</i>	114	1.97 (.88)	94	2.50 (1.12)	.53***
<i>Multi-Racial</i>	1262	2.00 (.80)	1105	2.22 (.94)	.22***
<i>Other</i>	370	2.03 (.83)	142	2.11 (.94)	.08
Sexual Orientation:					
<i>Heterosexual</i>	16329	1.96 (.81)	15826	2.03 (.86)	.07***
<i>Gay or Lesbian</i>	205	2.52 (.94)	270	2.73 (.94)	.21*
<i>Bi-sexual</i>	630	2.59 (.89)	809	2.76 (.93)	.17***
<i>Questioning</i>	365	2.55 (.94)	403	2.76 (.92)	.21**
Gender Identity:					
<i>Transgender</i>	280	2.40 (1.08)	192	2.71 (1.01)	.31**

Note: Codes range from 1-4 for the three anxiety sub-scale questions: (1) Not at all (2) A little (3) Often (4) Always.

* p < .05. ** p < .01. *** p < .001.