Needs Assessments

The association of stress with anxiety and depression: Evidence from a community health needs assessment

Nicole La Tournous, MPH, and Grace Bagwell-Adams, PhD, MPA

College of Public Health, University of Georgia, Athens, GA

Corresponding Author: Nicole La Tournous • 100 Foster Road, Athens, GA 30606 • (706) 713-2737 • nicole.latournous@uga.edu

ABSTRACT

Background: Mental illness affects approximately 1 in 5 Americans, making mental health an important area of study for public health. Much research has been conducted on two of the most prevalent mental health disorders, anxiety and depression. However, the association of stress with these disorders, especially specific types of stress (*e.g.*, financial, health, relationship), has been under-studied at the local level. This study aimed to gain insight into the relationship between stress, anxiety, and depression in Athens-Clarke County, Georgia.

Methods: Data collected in the 2015 Athens-Clarke County Community Health Needs Assessment were analyzed using linear regression models to explore the association between stress and anxiety and depression.

Results: When the data were aggregated, the presence of stress in a respondent's household was associated with a 17.8% ($p<0.001$; $t=5.21$) increase in the likelihood of reporting the presence of anxiety and a 10.0% ($p<0.01$; $t=2.96$) increase in the likelihood of reporting the presence of depression. Significant associations with mental health status were also found for race, insurance status, perceptions of neighborhood safety, and discrimination.

Conclusions: The results demonstrated that, in Athens-Clarke County, Georgia, stress was significantly and positively associated with both anxiety and depression. Financial, home environment, and neighborhood safety stressors were the strongest predictors of household mental health disorders. These results have implications for public health policy and clinical professionals, including the possibility of tailoring treatment strategies to the types of stress present in a patient's life. Further research is needed to explore this relationship in other communities.

Key Words: mental health, anxiety, depression, stress, community health

Statement of Student-Mentor Relationship: The lead author for this report, Nicole La Tournous, recently earned her Master of Public Health from the University of Georgia, College of Public Health. Dr. Grace Bagwell-Adams, the senior author, served as her capstone advisor and mentor.

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INTRODUCTION

In the United States, 17.1% of the population suffers from a mental illness in any given year (Behavioral Health, United States, *2012*, 2013). Georgians experience mental illness at a slightly higher rate, with approximately 1 in 5 residents affected (*Behavioral Health*, United States, 2012, 2013). Two of the most common conditions are anxiety and depression. The American Psychological Association defines anxiety as, "an emotion characterized by feelings of tension, worried thoughts and physical changes like increased blood pressure" ("Anxiety," 2016). Depression is characterized by, "a lack of interest and pleasure in daily activities, significant weight loss or gain, insomnia or excessive sleeping, lack of energy, inability to concentrate, feelings of worthlessness or excessive guilt and recurrent thoughts of death or suicide" ("Depression," 2016). In line with the overall rates of mental illness, anxiety and depression are also more prevalent in Georgia relative to the national average. As of 2002, 18%

of Americans experienced anxiety (Behavioral Health, United States, 2012, 2013), and 7.6% experienced depression (Pratt & Brody, 2014). A 2013 study showed higher rates of prevalence for the state of Georgia: 19.4% of Georgians experienced anxiety, and 10% experienced depression (Reeves, Lin, & Nater, 2013).

The population health implications of these disorders are considerable and have far-reaching impacts for individuals, families, and society. According to the Agency for Healthcare Research and Quality, from 2009-2011, mental health treatment cost the US an average of $48.2 billion annually, with nearly half being costs of prescription drugs (Zibman, October 2014). This estimate, however, includes only what the Panel on Cost-Effectiveness in Health and Medicine refers to as consumption costs of treatment, and not the costs of consequences due to the mental health disorder (*Cost-effectiveness in health and medicine*, 2017). Another study reported the incremental economic burden of depression in 2010 as $210.5 billion, which includes consequential costs such as absenteeism in the workplace and disability-related costs (Greenberg, Fournier, Sisitsky, Pike, & Kessler, 2015). Mental health disorders are the largest cause of disability in people aged 15 to 44, leading to a substantial loss of productivity to society (Insel, Collins, & Hyman, 2015).

Mental health treatment and associated costs are further complicated by the fact that many individuals delay treatment until the disorder becomes disabling, at which point treatment is more costly (Insel et al., 2015). Some individuals may also self-medicate (*e.g.* alcohol, drugs), leading to the accrual of additional costs (Biringer, Davidson, Sundfør, Lier, & Borg, 2016). Since these hidden costs are difficult to identify and quantify, costs for mental health disorders tend to be underestimated.

Nearly 40% of costs for mental health treatment are paid with public funds (*e.g.*, Medicare, Medicaid) (Zibman, October 2014). Understanding these costs, where they come from, and how they are funded is necessary for public health and for fiscal sustainability of public insurance programs. Because anxiety and depression are costly, and current estimates are likely lower than the true costs, research on these disorders is appropriate, having implications for both policymakers and clinicians.

Another area in which it is necessary to increase understanding is the role stress plays in the presence of anxiety and depression. According to the APA, acute stress “comes from demands and pressures of the recent past and anticipated demands and pressures of the near future” ("Stress: the different kinds of stress," 2016). Although studies have explored various indicators of anxiety and depression (*e.g.* adverse childhood events, sexual orientation, and genetic factors), there has been little research on the association of stress with these mental health disorders, especially at the local level (Chapman, Dube, & Anda, 2007; Petterson, VanderLaan, & Vasey, 2016; Trudel-Fitzgerald, Ying, Singh, Okereke, & Kubzansky, 2016). Much of the existing literature focuses on the biological responses of the body in the presence of stress, such as increased risk of coronary heart disease and diabetes, as opposed to studying this relationship from a public health perspective (Trudel-Fitzgerald et al., 2016).

A few studies, however, have explored the association of stress and mental health. For example, in their 2011 study of older adults, researchers from the University of South Florida found that “perceived stress was a stronger predictor of depression in late adulthood” (Kwag, Martin, Russell, Franke, & Kohut, 2011). Another study found that the presence of stress was associated with symptoms of peritraumatic dissociation, a precursor to post-traumatic stress disorder (Morgan et al., 2001). Additional studies that have taken a public health approach to examining the relationship between stress and mental health were conducted outside of the United States (Ni et al., 2016). The generalizability of international public health work is limited, highlighting a gap in the literature and our understanding of the link between stress, anxiety, and depression.

As we move further into the implementation phase of the Patient Protection and Affordable Care Act (ACA), we have new opportunities and legislative mandates to conduct local needs assessments that allow us to explore public health questions, such as the one highlighted in the present report. The ACA’s requirement for hospitals to conduct Community Health Needs Assessments (CHNAs) provides the opportunity to consider community health indicators in conjunction with demographic information at the local level. The more local communities and society as a whole understand about the links between stress and health, the more equipped

clinicians and policymakers will be to improve mental health and overall health outcomes in the population.

The present study adds to current literature in several ways. First, it utilized recent data from a CHNA conducted in Athens-Clarke County, Georgia. The CHNA data were leveraged to explore an association that is important for any community to understand, given the far-reaching implications of stress and mental health. This report focuses on providing a set of recommendations for local stakeholders, as well as practitioners, in how to use this information to enhance the delivery of services to improve mental health outcomes.

Data

The data used were collected as part of the Athens-Clarke County Community Health Needs Assessment (CHNA) by Community Connection of Northeast Georgia. The CHNA was sponsored by Athens Regional Medical Center and St. Mary's Health Care System, hospitals in Athens-Clarke County. The data are from a cross-sectional sample. Study participants were notified of survey collection methods online through social, professional, and neighborhood listservs. The survey, which was made available in both English and Spanish, was conducted online, as well as in-person at multiple community events hosted by public schools and local parks. To obtain data from under-represented populations, specifically low-income, non-white individuals, the surveys were also conducted at community food banks during their monthly distribution events. The data collection period was from February 2015 to July 2015.

The survey instrument included questions on demographic characteristics, socioeconomic status, health status, prevalence of anxiety and depression, presence of stress, and indicators of stress, such as family, work/school, relationship with partner, finances, home environment, neighborhood, and health. Surveys were conducted at the household level, but contained questions that requested information at both the household and individual respondent level. One respondent from each household was asked to answer survey questions on behalf of all household members. Data were collected from a total of 1,256 households.

Survey respondents were asked to identify household characteristics, including the number of people, race and ethnicity, and health insurance status. The following questions from the CHNA were used in this study: 1) Does anyone in your household (including you) have anxiety? (Yes or No); 2) Does anyone in your household (including you) have depression? (Yes or No); 3) If you are experiencing stress, please indicate all of the areas which you have felt stress in the last month (Family, Work/School, Relationship with partner, Finances, Home environment, Neighborhood, and/or Health; or I am not experiencing stress). Participants were asked to select all that apply when responding to this question. To isolate the effect of each particular stressor, individual dichotomous variables were created for each possible cause of stress listed on the survey.

Table 1 shows descriptive demographic information on the sample. Anxiety was reported in 21.0% *(n=292)* of households, and depression was reported in 21.3% *(n=280)*. The survey sample was comprised of 59.9% *(n=833)* White households, 30.4% *(n=339)* African American households, and 3.8% *(n=49)* Latino households. Asian households made up only 2.2% *(n=17)* of the survey population, with the remaining 3.7% *(n=55)* reporting as other (defined as Native American or Asian Pacific Islander). The average household size was 3.1 persons.

The survey also revealed that 83.5% *(n=1063)* of the sample population reported experiencing stress. When asked to report the causes of stress, 35.5% *(n=453)* cited family, 54.9% *(n=699)* cited work/school, 22.6% *(n=288)* cited relationship with partner, 47.0% *(n=598)* cited finances, 11.7% *(n=149)* cited home environment, 5.4% *(n=69)* cited neighborhood, and 26.6% *(n=338)* cited health.

Of the sample population 9.9% *(n=128)* reported a monthly household income of less than $500 per month, and 11.4% *(n=145)* reported that they were uninsured. When asked if a respondent had access to mental health care when needed, 82.3% *(n=1057)* of the sample responded "yes". Participants were also asked if they felt safe in their neighborhoods, if they had been discriminated against, and if they had debt, with 66.1% *(n=855)*, 13.9% *(n=178)*, and 81.0% *(n=996)* answering "yes", respectively.

Table 1. Descriptive statistics of the CHNA sample population in Athens-Clarke County, GA

	mean	sd
Anxiety	0.229	0.421
Depression	0.220	0.414
White	0.644	0.479
Black	0.262	0.440
Latino	0.038	0.191
Asian	0.013	0.114
Race: Other	0.030	0.171
Stress	0.835	0.371
Stressor: Family	0.356	0.479
Stressor: Work/School	0.549	0.498
Stressor: Relationship with Partner	0.226	0.419
Stressor: Finance	0.470	0.499
Stressor: Home	0.117	0.322
Stressor: Neighborhood	0.054	0.227
Stressor: Health	0.266	0.442
Income (Less than $500/month)	0.099	0.299
Uninsured	0.114	0.317
Access to Mental Health Care	0.823	0.382
Neighborhood Safety	0.661	0.473
Discrimination against Respondent	0.139	0.346
Respondent's Debt	0.810	0.392
N	1293	

Notes: Athens-Clarke County CHNA data, 2015. All variables are dichotomous measures with [0,1] values.

METHODS

All statistical analyses were conducted using STATA v.13.0 (STATA, 2013). Anxiety and depression were the independent variables of interest and were measured as dichotomous variables (a household reporting anxiety received a "1" and a household not reporting anxiety received a "0"; a household reporting depression received a "1" and a household not reporting depression received a "0"). Separate models were estimated for each independent variable, anxiety and depression. This allowed for accurate estimation of the independent effect of each dependent variable on the presence of anxiety and depression, respectively.

The first step of this analysis was estimating correlations between the two independent variables and all dependent variables of interest (in this case, the indication of any stress present in the respondent's household). Next, two-group means comparison tests were estimated between anxiety and depression and all dependent variables of interest. The two-group means comparison test separated the sample into two groups – those who report the mental health outcome (anxiety or depression) and those who do not – and tested to see if there was any effect from the presence of stress. The results showed a significant difference between the two groups for both anxiety and depression.

Finally, linear probability models were estimated on the full sample to assess the relationship between the presence of stress in the household and the presence of anxiety and depression. Basic bivariate models were utilized to determine the effect of the presence of any type of stress on anxiety and depression. Demographic controls (race, income, and insurance status) were introduced to the second set of models. A third set of regressions estimated the effect of stress on the presence of anxiety and depression with the introduction of additional controls (access to mental health care, neighborhood safety, discrimination, and debt).

Basic models were then applied for the whole sample to observe the effects of various types of stressors (family, work/school, relationship, finance, home environment, neighborhood, and health) on the likelihood of anxiety and depression in a household. Reduced form equations were used to investigate the relationship of independent stressors and mental

health. This was done to eliminate the threat of collinearity and to explore the differential effects of various stressors. Linear probability models were estimated in these iterations, from simple to complex, to ensure robustness and to test the consistency of the findings. The last model was preferred because it is the most stringent and reduces the threat of omitted variable bias by controlling for both demographic and the additional control variables mentioned above.

RESULTS

According to the two-group means-comparison test, the presence of any stress in a respondent's household was associated with a 23.54% ($p<0.01$; $t=-7.53$) increase in the likelihood of reporting anxiety and a 15.29% ($p<0.01$; $t=-4.94$) increase in the likelihood of reporting depression. Regression models corroborated these results.

Table 2 reports the results for multivariate regression models assessing the effect of stress on anxiety and depression. The presence of stress in a respondent's household was associated with a 23.5% ($p<0.001$; $t=7.53$) increase in the likelihood of reporting the presence of anxiety. When controlling for demographic characteristics (race, income, and insured status) the presence of stress was associated with a 19.8% ($p<0.001$; $t=6.29$) increase in the likelihood of reporting anxiety. When additional controls (access to mental health care, neighborhood safety, discrimination, and debt) were introduced, the presence of stress in a household was associated with a 17.8% ($p<0.001$; $t=5.21$) increase in the likelihood of reporting anxiety.

The presence of stress in a respondent's household was associated with a 15.4% ($p<0.001$; $t=4.94$) increase in the likelihood of reporting the presence of depression. When controlling for demographic characteristics (race, income, and insured status), the presence of stress was associated with an 11.9% ($p<0.001$; $t=3.77$) increase in the likelihood of reporting depression. When additional controls (access to mental health care, neighborhood safety, discrimination, and debt) were introduced, the presence of stress in a household was associated with a 10.0% ($p<0.01$; $t=2.96$) increase in the likelihood of reporting depression.

Additional dependent variables that had significant relationships with anxiety and depression in the full model were reporting race as White, lacking health insurance, and lacking neighborhood safety. Being White was associated with a 17% ($p<0.001$; $t=4.0$) increase in the likelihood of reporting anxiety and an 8.2% ($p>0.1$; $t=1.92$) increase in the likelihood of reporting depression. Being uninsured was associated with a 7.7% ($p<0.1$; $t=1.96$) increase in the likelihood of reporting anxiety and a 7.9% ($p<0.05$; $t=2.03$) increase in the likelihood of reporting depression. Neighborhood safety was associated with an 8.4% ($p<0.01$; $t=-3.25$) decrease in the likelihood of reporting anxiety and a 7.4% ($p<0.01$; $t=-2.90$) decrease in the likelihood of reporting depression. In addition, discrimination against a respondent was associated with a 6% ($p<0.1$; $t=-1.69$) decrease in the likelihood of reporting anxiety. Discrimination did not have a statistically significant relationship with depression.

Table 2. Association of any type of stress and mental health

	Anxiety			Depression		
	(1)	(2)	(3)	(4)	(5)	(6)
	Basic	Demographics	Full Controls	Basic	Demographics	Full Controls
	b/se	b/se	b/se	b/se	b/se	b/se
Stress	0.24***	0.20***	0.18***	0.15***	0.12***	0.10***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
White		0.18***	0.17***		0.10**	0.082*
		(0.04)	(0.04)		(0.04)	(0.04)
Black		0.023	0.022		-0.041	-0.055
		(0.04)	(0.05)		(0.04)	(0.05)
Income <$500/month		0.035	0.031		0.085**	0.048

	Anxiety			Depression		
		(0.04)	(0.04)		(0.04)	(0.04)
Uninsured		0.071*	0.077*		0.086**	0.079**
		(0.04)	(0.04)		(0.04)	(0.04)
Access to Mental Health Care			0.024			0.058*
			(0.03)			(0.03)
Neighborhood Safety			-0.084***			-0.074***
			(0.03)			(0.03)
Discrimination Toward Respondent			-0.060*			0.016
			(0.04)			(0.04)
Debt			0.044			0.020
			(0.03)			(0.03)
Constant	0.034	-0.068	-0.038	0.091***	0.046	0.064
	(0.03)	(0.05)	(0.06)	(0.03)	(0.05)	(0.06)
Number of Observations	1256	1250	1193	1256	1250	1193

Notes: * p<0.10, ** p<0.05, *** p<0.01. Beta coefficients are reported with standard errors in parenthesis.

Table 3 reports the results of multivariate regression models assessing the effect of various stressors on the presence of anxiety and depression. The presence of family (8.11%; p<0.001; t=3.19), work/school (11.0%; p<0.001; t=4.71), finance (9.66%; p<0.001; t=3.96), home environment (10.6%; p<0.01; t=2.75), neighborhood (10.3%; p<0.05; 1.97), and health (6.07%; p<0.05; t=2.59) stressors were all associated with an increase in the likelihood of reporting anxiety. The association between relationship stress and anxiety was not statistically significant. When demographic controls (race, income, and insured status) were considered, the presence of family (7.82%; p<0.01; t=3.10), work/school (7.73%; p<0.001; t=3.19), finances (9.66%; p<0.001; t=3.93), home environment (10.2%; p<0.01; t=2.66), neighborhood (10.4%; p<0.05; 2.01), and health (6.79%; p<0.05; t=2.54) stressors were all associated with an increase in the likelihood of reporting anxiety. When these controls were introduced, the results for the association between relationship stress and anxiety were still not statistically significant.

In considering the effects of these stressors on the likelihood of reporting depression, work/school stress and health stress did not have a statistically significant association. However, the presence of family (7.27%; p<0.01; t=2.91), relationship (8.87%; p<0.01; t=3.09), finance (12.7%; p<0.001; t=5.30), home environment (10.9%; p<0.01; t=2.86), and neighborhood (14.9%; p<0.01; t=2.90) stressors were associated with an increase in the likelihood of a respondent reporting depression. When demographic controls (race, income, and insured status) were introduced, work/school stress did not demonstrate a statistically significant association with depression. The presence of health stress, however, was associated with a 4.62% (p<0.1; t=1.75) increase in the likelihood of reporting depression when the model accounted for demographic controls. The presence of family (7.20%; p<0.01; t=2.91), relationship (7.58%; p<0.01; t=2.66), finance (12.9%; p<0.001; t=5.36), home environment (10.2%; p<0.01; t=2.71), and neighborhood (14.9%, p<0.01; t=2.93) stressors were also associated with an increase in the likelihood of reporting depression.

Table 3. Association of various stressors and mental health

	Anxiety		Depression	
	(1)	(2)	(3)	(4)
	Basic	Demographics	Basic	Demographics
	b/se	b/se	b/se	b/se
Stressor: Family	0.081***	0.078***	0.073***	0.072***
	(0.03)	(0.03)	(0.03)	(0.02)
Stressor: Work/School	0.11***	0.077***	0.013	-0.019
	(0.02)	(0.02)	(0.02)	(0.02)
Stressor: Relationship with Partner	0.039	0.023	0.089***	0.076***
	(0.03)	(0.03)	(0.03)	(0.03)
Stressor: Finances	0.097***	0.097***	0.13***	0.13***
	(0.02)	(0.02)	(0.02)	(0.02)
Stressor: Home Environment	0.11***	0.10***	0.11***	0.10***
	(0.04)	(0.04)	(0.04)	(0.04)
Stressor: Neighborhood	0.10**	0.10**	0.15***	0.15***
	(0.05)	(0.05)	(0.05)	(0.05)
Stressor: Health	0.061**	0.068**	0.042	0.046*
	(0.03)	(0.03)	(0.03)	(0.03)
White		0.17***		0.094**
		(0.04)		(0.04)
Black		0.023		-0.051
		(0.04)		(0.04)
Income < $500/month		0.031		0.076**
		(0.04)		(0.04)
Uninsured		0.041		0.031
		(0.04)		(0.04)
Constant	0.051***	-0.048	0.075***	0.034
	(0.02)	(0.04)	(0.02)	(0.04)
Number of Observations	1255	1249	1255	1249

Notes: * p<0.10, ** p<0.05, *** p<0.01. Beta coefficients are reported with standard errors in parenthesis.

DISCUSSION

A large percentage of respondents, nearly 84%, reported experiencing some kind of stress – slightly higher than the 78% nationally reported by the APA in 2015 ("2015 Stress in America," 2015). The survey instrument inquired as to the types of stressors present in the household. These stressors were family, work/school, relationship with partner, finance, home environment, neighborhood, and health. More than 50% of respondents indicated that work/school was a cause of stress, and nearly 50% indicated that finances were a cause of stress in their households. In addition, more than 20% of respondents reported the presence of anxiety and/or depression in their households. Even if no associations were found, the high prevalence of both stress and mental health disorders draws attention to the presence of such conditions and stresses that households are enduring. These estimates are almost certainly low because of the stigma or shame associated with mental health disorders. In other words, there are likely many unreported cases of stress, anxiety, and depression.

The results of the linear regression models provide evidence that stress is a factor in regard to the presence of anxiety and depression, which is consistent with current literature (Petterson et al., 2016; Trudel-Fitzgerald et al., 2016). The presence of stress was associated with an 18% increase in the likelihood of reporting anxiety and a 10% increase in the likelihood of reporting depression. Although results were consistently significant, the magnitude was almost twice as great for anxiety than for depression. The differential effects that stress had on anxiety relative to depression have implications in the field of mental health, in that anxiety and depression should not be treated or studied in the same way.

Based on the results of this study, incorporating questions regarding the presence of stress into

mental health screenings may be beneficial in managing depression and, especially, anxiety. In January 2016, the US Preventive Services Task Force recommended depression screenings for all adults in the general population, to be conducted by their primary care physicians (Siu et al., 2016). Although there is currently no recommendation from the task force regarding screenings for anxiety, this report provides evidence that stress should be taken into consideration in developing a treatment plan for anxiety.

The results also revealed that, although household income does not have a significant association with the presence of anxiety or depression, insurance status does. A lack of health insurance in a household was associated with a 7.7% increase in the likelihood of reporting anxiety and a 7.9% increase in the likelihood of reporting depression. This presents another challenge in managing mental health disorders. Households without insurance are more likely to suffer from anxiety and/or depression, introducing yet another barrier to accessing treatment.

An additional relationship of interest is that between the perception of neighborhood safety and the presence of anxiety and depression. A 1996 study found that adolescents living in less safe neighborhoods, as defined by the presence of crime, violence, drug use, and graffiti, are more likely to experience symptoms of depression (Aneshensel & Sucoff, 1996). However, little research on the subject has been subsequently conducted. In Athens-Clarke County, perceiving one's neighborhood as safe was associated with an 8.4% decrease in the likelihood of reporting anxiety and a 7.4% decrease in the likelihood of reporting depression. This appears to be an area for future research.

Since the results showed a significant relationship between stress and mental health and the survey instrument provided information on specific types of stressors, additional regression models were utilized to explore these subpopulations. Table 3 does not include all controls included in Table 2 because of multicollinearity. Since the data for "any stress" were derived from the same question on the survey instrument as the data for the individual stressors, the variables are perfectly predictive of one another, thus "any stress" was not included in the model.

The results of the independent stressor models showed that different causes of stress differentially affect anxiety and depression. For example, work/school stress was associated with a 7.7% increase in the likelihood of reporting anxiety, but it was not significantly associated with depression. In contrast, relationship stress was associated with a 7.6% increase in the likelihood of reporting depression but was not significantly associated with anxiety. Of the independent stressors, those from a respondent's neighborhood and home environment had the largest association (10%) with anxiety. Similarly, neighborhood stress had the largest association (15%) with depression. These results suggest that not all stress is equal; future research is needed to gain an understanding of how various types of stress relate to different mental health disorders. Having a better understanding of these associations would have implications for the treatment of mental health disorders.

This study has several limitations. First, sampling methodology included attempts to reach a diverse population of respondents and convenience sampling was used, making it unclear whether or not the sample was representative. Since the sample was limited to Athens-Clarke County, Georgia, findings cannot be assumed as generalizable to other communities. Respondents were also asked to answer survey questions at the household level, as opposed to the individual level, which may have biased the results. In addition, the CHNA was a cross-sectional study, which limits the ability to establish causality. While establishing causality was not a goal of this study, it is an area for future research, and may be considered by communities in designing CHNAs. Finally, the stigma associated with mental health disorders makes the self-reported responses obtained in this survey likely to be conservatively biased. In other words, respondents may have been less likely to report the presence of anxiety and depression due to society's negative view of these disorders.

CONCLUSIONS

This study showed that, in Athens-Clarke County, Georgia, stress is significantly and positively associated with both anxiety and depression. It has added to current literature in exploring the association. The use of timely, local data can be used as a model by other

communities, who can leverage their CHNA process to collect data and conduct analyses such as these to benefit their communities and improve public health outcomes at the local level. There are implications of this study for both clinicians and policymakers:

1. Clinicians should not underestimate stress, as it can have a substantial impact on mental health.
2. Questions about stress and stressors should be included in mental health screenings by primary care physicians and other clinicians.
3. As one of the leading causes of disability among working-age individuals (Biringer et al., 2016), mental health disorders should be addressed by policymakers when allocating funding and other resources.
4. It is necessary for communities to ask questions about stress when conducting CHNAs, as it is a factor in predicting mental health outcomes.

To improve mental health outcomes, future research is necessary so that practitioners can better serve their communities. In particular, cross-sectional studies with representative samples would allow results to be pooled, so that trends can be observed over time. As the ACA requires CHNAs to be conducted at least every three years, it would be beneficial for communities to use these to follow these health trends. Such monitoring will give them an opportunity to improve health outcomes.

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