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# What Does Anxiety Look Like? Prevalence Among ED Patients

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## **What Does Anxiety Look Like? Prevalence Among ED Patients**

*Scholarly Project Final Paper*

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### **Literature review:**

The prevalence of mental illness in the US population is common, with an estimated value of 8%. The emergency department patient population is especially vulnerable to mental illness. Previous studies from 2012 and 2017 estimated the rate of undiagnosed mental illness in the Emergency Department (ED) at 41-42%.<sup>1,2</sup> According to the studies, only a minority of these were identified by the physician.

DSM-5 defines the criteria for generalized anxiety disorder (GAD) as “excessive anxiety and worry (apprehensive expectation), occurring more days than not for at least 6 months, about a number of events or activities (such as work or school performance)”.<sup>3</sup> The Generalized Anxiety Disorder 7-item (GAD-7) scale is a short screening tool that has demonstrated good validity and reliability for anxiety.<sup>4,5,6,7,8,9</sup> A patient score of 8 or greater suggests that a diagnosis of generalized anxiety disorder.

There were an estimated 1.2 million ED visits related to anxiety in the US annually between 2009-2011 (approximately 1% of visits).<sup>10</sup> A recent study from our institution identified an existing diagnosis of anxiety, as noted in the medical record, among 35% of ED patients.<sup>11</sup> However, in this study the documented diagnosis was not confirmed and occult anxiety was not studied. There are no previous Emergency Medicine studies that identify the prevalence of GAD and risk factors that physicians should be aware of in the ED.

### **Hypothesis/Specific Aims/Research Questions:**

This study was established to identify the prevalence of GAD among participants in the ED, including both positive screening scores and previously diagnosed anxiety. The study was also established to identify potential associations of high GAD-7 scores in the ED and demographic information including gender, ethnicity, and previous diagnosis.

My duty was to examine the prevalence of anxiety and then also look at the comparison by gender, race, and previous anxiety diagnosis. The hypothesis is that there is no significant difference in prevalence of generalized anxiety disorder in the ED compared to the general population. The secondary hypothesis is that there is no association with gender or ethnicity and the prevalence of anxiety. Testing this hypothesis would help improve emergency physicians understanding of the prevalence and risk factors for GAD.

### **Methodology:**

This study was approved by the Wright State University Institutional Review Board. Trained medical students collected data from eligible participants in the Miami Valley Hospital Emergency Department. Eligible participants were ED patients over the age of 18 with a self-reported pain score ranging from 1-10 on the verbal numeric rating scale (VNRS). Data collected included age, gender, ethnicity, previous anxiety diagnosis, GAD-7 scores, ED diagnosis, and ED disposition. Data were analyzed to identify the overall prevalence of generalized anxiety disorder among participants, including previously diagnosed anxiety and positive screening for anxiety. Participants were excluded if they were in distress and/or did not speak English. The data were then analyzed dichotomously to compare participants with GAD scores 8 or higher to those with GAD scores below 8 for each of the different factors previously listed. Each factor

was also examined continuously to determine if there was a significant p value difference for each factor. The statistician recommended a sample size of over 300 participants for this study. Our sample size of 320 participants exceeds the recommendation.

## **Results:**

Among 320 participants, a majority of participants (63%, n = 202) were female. A majority of participants (63%, n = 200) were white. A majority of participants (55%, n = 175) had a GAD-7 score of 8 or higher, meeting criteria for Generalized Anxiety disorder. (Figure 1) A significant minority of participants (30%, n = 97) had a diagnosis of anxiety on their medical record. (Figure 2)

Factors that were associated with GAD-7 scores of 8 or higher include previous diagnosis of anxiety noted in the medical record ( $p = 0.05$ , Mann-Whitney-Wilcoxon). Factors that were not associated with GAD-7 scores of 8 or higher include gender ( $p = 0.41$ , Fisher's Exact test) and ethnicity ( $p = 0.85$ , Fisher's Exact test). (Table 1)

## **Discussion:**

This study shows that generalized anxiety disorder is common among patients in the emergency department with any pain, with 55% of participants meeting the GAD-7 criteria. This figure is higher than a recent report of a self-reported anxiety prevalence in ED patients of 33%.<sup>12</sup> 65% of the participants that met the criteria for diagnosis of GAD (36% of all participants) did not have a diagnosis listed in their medical record. This result is higher than previous reports that show undiagnosed mental illness at a 41% rate,<sup>1,2</sup> and a previous report of 8% with a GAD-7 score of 8+.<sup>6</sup>

We found no statistically significant difference in the prevalence of GAD between genders in this patient population. This finding contradicts a previous study that showed a higher GAD-7 score among women.<sup>3</sup> Potential reasons for this disparity include ED patient population changes over time.

Due to our exclusion of patients without pain scores, a further direction this study could go would be to determine if there is a statistical difference in GAD-7 scores for patients with and without pain scores.

### **Limitations:**

These results do not predict the likelihood of GAD among individuals. Individual assessment on mental illness is crucial to identification and treatment of underlying conditions. Because this was part of a larger study, participants were only eligible if they had a VNRS pain score of 1-10. Non-African American minorities were excluded from data analysis due to small sample size.

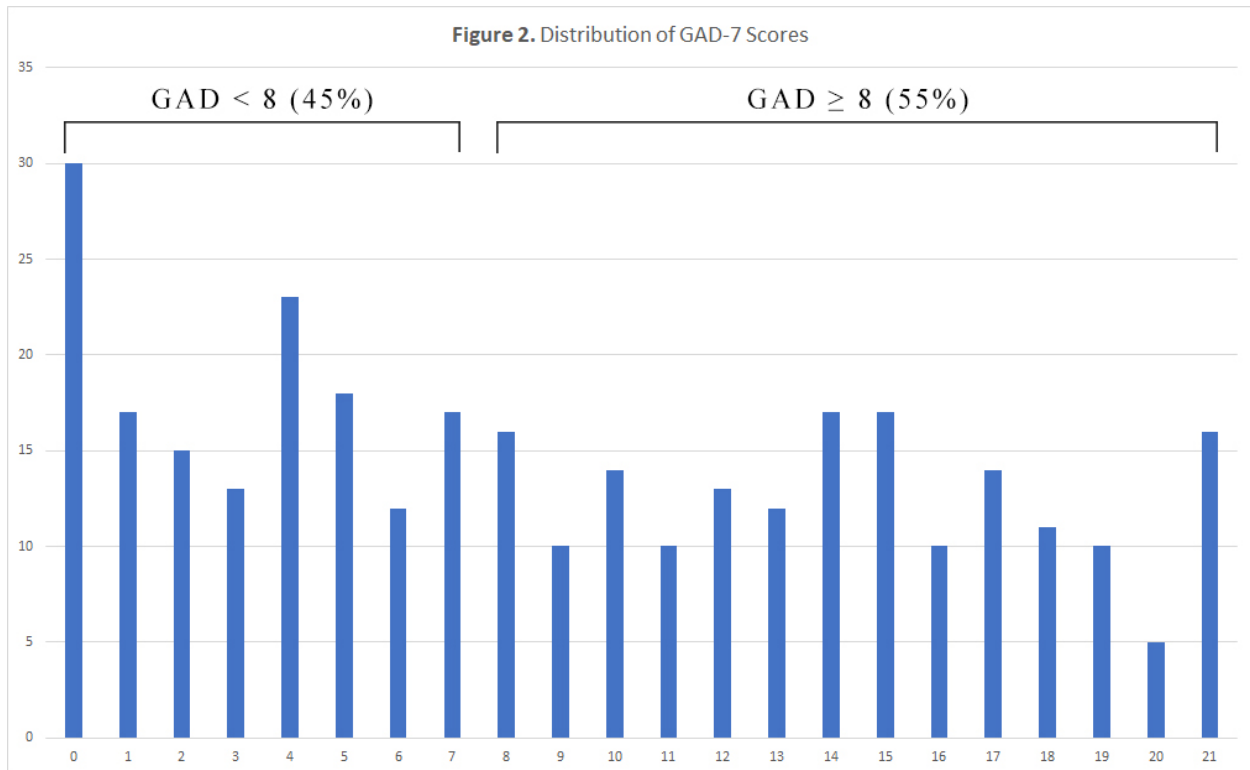
### **Conclusion:**

The GAD-7 score is a brief screening tool that has demonstrated validity and reliability for identifying anxiety. A majority of ED patients met criteria for generalized anxiety disorder. Only a minority of those who met the criteria had a previous diagnosis of anxiety. Our study showed that gender and ethnicity are not associated with GAD. A previous diagnosis of anxiety listed on the medical record was associated with positive screening criteria. These results feature the importance of recognition, documentation, and referral for treatment of GAD among ED patients.

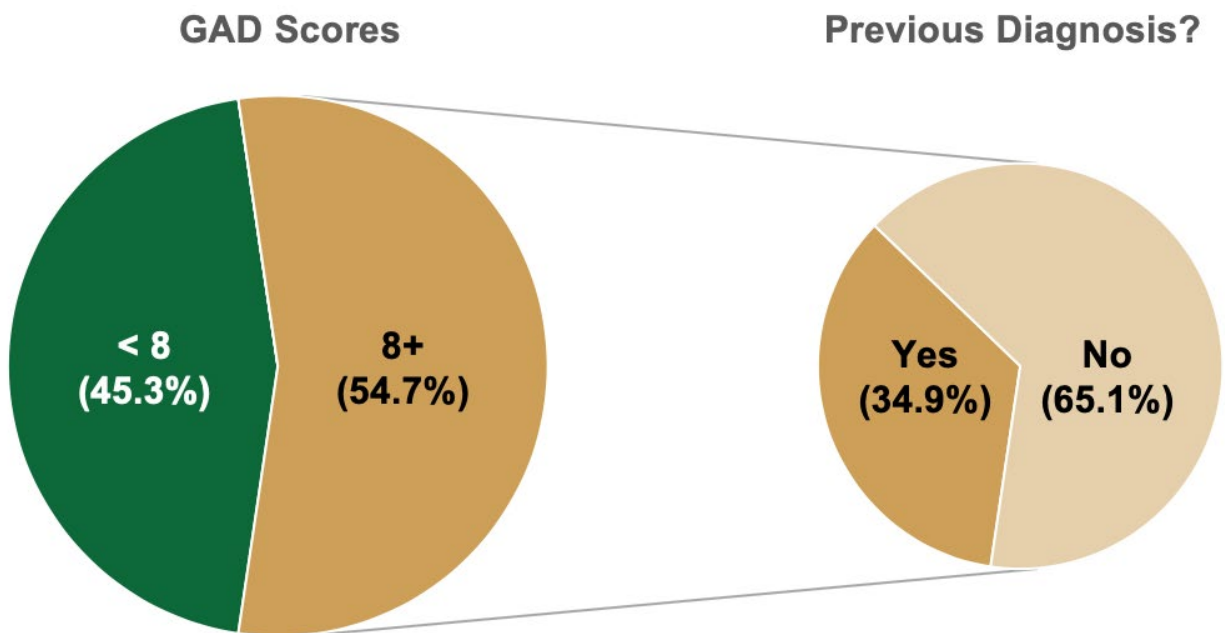
**Table 1** Results relevant to focus

	Did Not Meet (GAD < 8)	Met (GAD 8+)	p-value
Total participants	145	175	-
Patient gender - n (%) - Male - Female	57 (39.3%) 88 (60.7%)	61 (34.9%) 114 (65.1%)	0.41
Patient ethnicity - n (%) - African American - White - Other (excluded from analysis)	49 (33.4%) 89 (61.4%) 7 (4.8%)	64 (36.6%) 111 (63.4%) 0 (0%)	0.85
Previous diagnosis of anxiety (noted in medical record) - n (%) - Yes - No	36 (24.8%) 109 (75.2%)	61 (34.9%) 114 (65.1%)	0.05*

**Figure 1** GAD-7 scores among 320 ED participants



**Figure 2** GAD-7 Scores and previous diagnosis



**References:**

<sup>1</sup>Downey VA, Zun LS. Identifying Undiagnosed Pediatric Mental Illness in the Emergency Department. *Pediatr Emerg Care*. 2017 Apr 24

<sup>2</sup> Downey LV, Zun LS, Burke T. Undiagnosed mental illness in the emergency department. *J Emerg Med*. 2012 Nov;43(5):876-82.

<sup>3</sup> American Psychiatric Association: Diagnostic and statistical manual of mental disorders (5<sup>th</sup> ed). WDSM-5<sup>TM</sup> Diagnostic Criteria. Washington DC. Generalized Anxiety Disorder 300.02 (F41.1)

<sup>4</sup> Spitzer RL, Kroenke K, Williams JBW, Lowe B. A brief measure for assessing generalized anxiety disorder. *Arch Intern Med*. 2006;166:1092-1097.

<sup>5</sup> Kertz, S., Bigda-Peyton, J., & Bjorgvinsson, T. (2012). Validity of the Generalized Anxiety Disorder-7 Scale in an Acute Psychiatric Sample. *Clinical Psychology & Psychotherapy*. doi:10.1002/cpp.1802

- <sup>6</sup> Löwe, B., Decker, O., Müller, S., Brähler, E., Schellberg, D., Herzog, W., & Herzberg, P. Y. (2008). Validation and Standardization of the Generalized Anxiety Disorder Screener (GAD-7) in the General Population. *Medical Care*, 46(3), 266-274. doi:10.1097/mlr.0b013e318160d093
- <sup>7</sup> Plummer, F., Manea, L., Trepel, D., & Mcmillan, D. (2016). Screening for anxiety disorders with the GAD-7 and GAD-2: A systematic review and diagnostic metaanalysis. *General Hospital Psychiatry*, 39, 24-31. doi:10.1016/j.genhosppsych.2015.11.005
- <sup>8</sup> Seo, J., & Park, S. (2015). Validation of the Generalized Anxiety Disorder-7 (GAD-7) and GAD-2 in patients with migraine. *The Journal of Headache and Pain*, 16(1). doi:10.1186/s10194-015-0583-8
- <sup>9</sup> Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A Brief Measure for Assessing Generalized Anxiety Disorder. *Archives of Internal Medicine*, 166(10), 1092. doi:10.1001/archinte.166.10.1092
- <sup>10</sup> Dark T, Flynn HA, Rust G, Kinsell H, Harman JS. Epidemiology of Emergency Department Visits for Anxiety in the United States: 2009-2011. *Psychiatr Serv*. 2017 Mar 1;68(3):238-244.
- <sup>11</sup> Marco CA, Cook A, Whitis J, Xidas J, Marmora B, Mann D, Olson JE: Pain Scores for Venipuncture Among Emergency Department Patients. *Am J Emerg Med* 2017 Jan;35(1):183-184.
- <sup>12</sup> Wells, K., Craven, P., Steenblik, J., Carlson, M., Cooper, C., & Madsen, T. (2017). Prevalence and treatment of anxiety among emergency department patients with pain. *The American Journal of Emergency Medicine*. doi:10.1016/j.ajem.2017.11.042