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The Relationship between Generalized Anxiety Disorder and Patient Age among Emergency Department Patients

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☒ By checking this box, I indicate that my mentor has read and reviewed my draft proposal prior to submission

Abstract

The objective of this study was to determine the relationship between Generalized Anxiety Disorder (GAD) and patient age in emergency department patients. The GAD-7 screening tool was used in an urban ED setting to survey patients about their anxiety, with a score of 8 or higher suggesting a diagnosis of GAD. Eligible participants included ED patients over the age of 18 with a painful condition ranging from 1-10 on the verbal numeric rating pain scale (VNRS). Participants were excluded if they were in distress and/or did not speak English. Of the 320 patients surveyed, the mean patient age was determined to be 47 years old. The average patient age who did not meet criteria for GAD was 50 years old and those who did meet criteria were on average 45.1 years old, at a student t-test p-value of 0.02. The correlation coefficient between age and total GAD-7 score was determined to be -0.14, at a Spearman p-value of 0.01. The

results demonstrate a statistically significant inverse relationship between patient age and GAD-7 score in the ED setting

Key Words: GAD, emergency, GAD-7

Introduction/Literature Review

The most common class of mental health disorders in the United States is anxiety disorders, with an estimated 12-month prevalence of 19% and a lifetime prevalence of 31%. (1) Prevalence studies done in the United States estimate that these anxiety disorders affect 15.7 million people every year and 30 million people at some point in their lives. (2) Anxiety disorders can present with acute symptoms, which results in many of these people being treated in the emergency department (ED). (2,3) In 2011, 1.2 million ED visits were estimated to be related to anxiety, which represented 0.93% of all ED visits in that year. (4) Additionally, it has been shown that people with anxiety frequently present to the ED multiple times to be treated for their condition, which contributes significantly to the greater than $42.3 billion estimated annual cost for treating these conditions. (5)

One of the most commonly diagnosed mental health conditions is generalized anxiety disorder (GAD). Epidemiology studies have shown there is a current (6 month) prevalence of about 2.8% and a lifetime prevalence of 6.6%. (2) It is considered a highly persistent disorder because only one third of those diagnosed actually achieve remission and older adults tend to report an average duration of symptoms lasting 20 years or longer. (2) People suffering from GAD typically have another comorbid mental health condition like major depressive disorder and the combination of conditions is what drives up the numbers of those seeking help from health care professionals to about 68%. (6)

In the current literature available, there is wide variation of estimated prevalence in anxiety disorders regarding age groups. It is a challenging task because anxiety disorders and their symptoms are difficult to measure accurately in young adults and even more difficult to assess in older adults. (7) According to a meta-analysis done in 2011, anxiety disorders with a strong

autonomic nervous system component (like panic attacks or panic-like symptoms) occur more commonly in childhood or early adulthood compared to later in life. Alternatively, worry disorders (like GAD) may be the most common among the older population (above the age of 60). (7) In one study, nearly half of a sample of GAD patients reported that their onset of symptoms began later in life. (8) Additionally, those with late-onset GAD were more likely to have a diagnosis of hypertension and a poorer health-related quality of life compared to those with early-onset GAD. (9)

A brief screening tool has been studied for screening for anxiety, the Generalized Anxiety Disorder 7-item (GAD-7) scale. This tool has demonstrated good reliability, as well as criterion, construct, factorial, and procedural validity. A score of 8 or greater suggests the diagnosis of generalized anxiety disorder.

It is hypothesized that worry disorders such as GAD develop later on in life as opposed to other kinds of anxiety disorders because age-related changes in the brain may reduce the tendency for autonomic responses. (7) In older age, impaired connections between the amygdala and frontal areas may occur. There would be impairment involving suppression of natural fear, resulting in the conversion of fears or worries into chronic pathological mental health conditions. (10) Some non-brain related risk factors of developing anxiety later in later are psychological or social in nature and include poor coping mechanisms, having an external locus of control, being childless, having lower income, and experiencing traumatic events. (11) Many of these same risk factors are shared with depression, which may contribute to the comorbid nature between the two conditions.

There is currently minimal literature available on the prevalence of GAD in Emergency Department patients. With such a high prevalence of anxiety in the United States resulting in a

significant number of Emergency Department visits, it would be beneficial to have an analysis of the patients' ages and which portion of them are diagnosed (or should be diagnosed) with GAD. Elucidating that information will hopefully bring awareness to the issue, as well as encourage Emergency Departments to better prepare their health care personnel to care for patients with a diagnosis of GAD and other mental health conditions.

Hypothesis/Specific Aims/Research Questions

This study was undertaken to identify any relationship between patient age and the diagnosis of generalized anxiety disorder among Emergency Department patients. The research hypothesis is that there is no relationship between patient age and the diagnosis of Generalized Anxiety Disorder in the ED population. Any association will lead to rejection of the null hypothesis.

Methods

This prospective patient survey study was conducted between September of 2017 and March of 2018 in the Miami Valley Hospital Emergency Department, an urban hospital in Dayton, OH. The study received exempt status from the Wright State University Institutional Review Board (IRB# 06105). Eligible participants included ED patients over the age of 18 with a painful condition ranging from 1-10 on the verbal numeric rating pain scale (VNRS). Participants were excluded if they were in distress and/or did not speak English.

Research assistants were given electronic medical record (EMR) access to the ED Tracking Board and were trained by the Principle Investigator using a standardized data collection form. The research assistants used the EMR to target qualified study candidates, invited the patients to participate, compiled responses by either verbally asking patients the GAD-7 questions or having the patients complete their own form by hand, and then entered the data in a spreadsheet for

statistical analysis. Data collection was performed on different days and at different times in order to reach a broad population of patients. Participation in the study did not interfere with medical care nor was any protected health information documented.

For this specific project, the ages of each participant were collected in the survey and then statistical measures were completed to compare the ages of those who qualified for a diagnosis of GAD and those who did not. This research design was determined to be the best route for our project due to the ability to collect data on many different variables so that there was opportunity to discover potential relationships among patient demographics. Data were analyzed by a statistician to identify the overall prevalence of generalized anxiety disorder among participants, including previously diagnosed anxiety and occult anxiety. Total GAD-7 score was analyzed both dichotomously and continuously. A total score of 8 or more was used to define GAD. Patients are categorized as having met or not met the criteria for GAD. The Student t-test was used to analyze the sub-groups of age and the diagnosis of GAD. The findings were used to identify any differences in age in Emergency Department patients diagnosed with anxiety.

Results

The total number of participants in the study was 320. The median total GAD-7 score was an 8 and the distribution of the scores are shown in Figure 1.

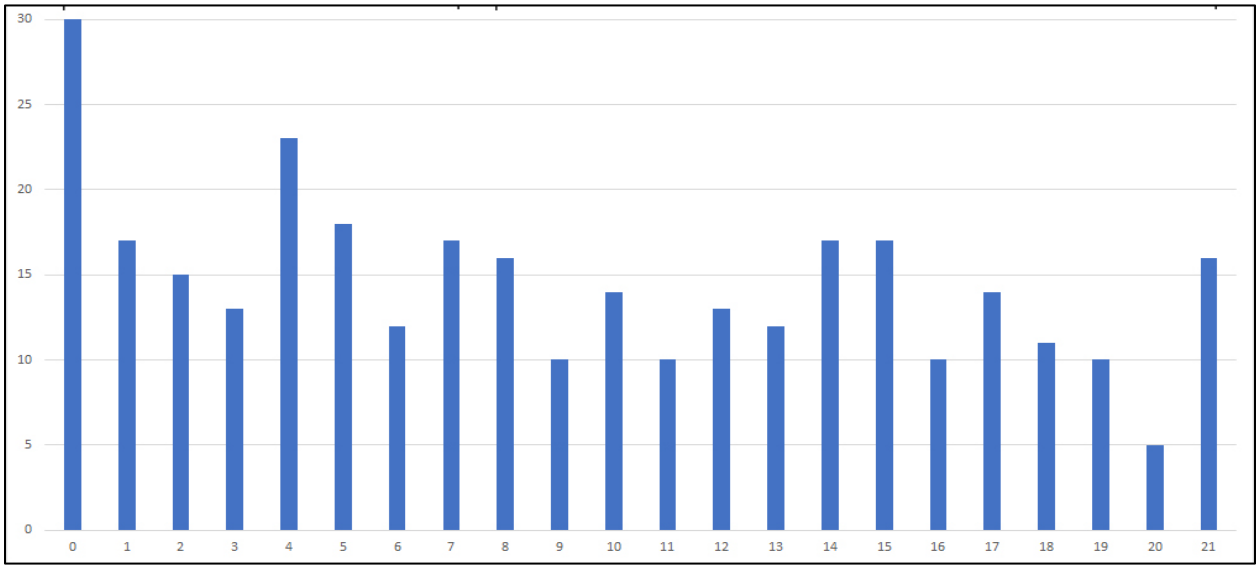

Figure 1: GAD-7 Score Distribution

The mean age of all participants was 47 years old with a standard deviation of 18. A significant minority of participants (30%, N = 97) had a previous diagnosis of anxiety on their medical record. A majority of participants (55%, N = 175) had a GAD-7 score of score ≥ 8, meeting criteria for Generalized Anxiety Disorder. 34% of those participants met the criteria, but had no previous diagnosis on their medical record. As represented in Figure 2, the mean age of participants not meeting GAD criteria was 50 years old with a standard deviation of 20 and those that did were an average of 45 years old with a standard deviation of 17. This carried a p-value of 0.02 and was therefore statistically significant (Student t-test). The correlation between age and total GAD-7 score was significant at -0.14 (p-value of 0.01, Spearman). Therefore, as the age of participant increased in this study the GAD-7 score decreased.

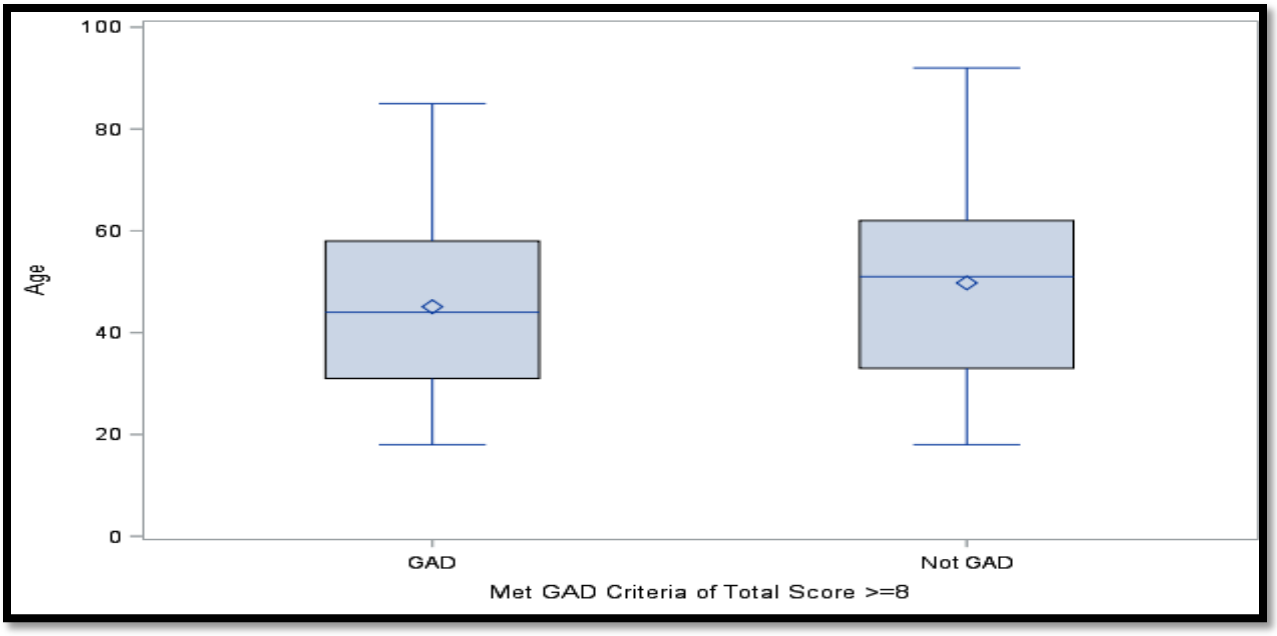

Figure 2: Box Plot of Patient Age by GAD-7 Criteria

Discussion

Based on the results of this study, the data that stands most clear is that Generalized Anxiety Disorder is common among emergency department patients. 55% of participants met criteria based on the GAD-7 screening tool and 34% of them did not have that diagnosis in their medical record previously. Although only 1% of emergency department visits are related to anxiety, it is clear that anxiety is an underlying problem for many people who seek care in the emergency department. (4)

Our original hypothesis was that there was no association between patient age and diagnosis of Generalized Anxiety Disorder among emergency department patients. However, the results indicate that age is a significant factor among those emergency department patients who meet criteria for GAD. Our data suggests that older patients are less likely to be suffering from GAD. This is further supported by the inverse relationship of age and GAD-7 score. These findings

contradict much of the research in current literature that supports the older populations being more likely to be suffering from GAD. Our findings could be related to the generational differences between participants. The older population may be less likely to admit anxiety symptoms than younger populations, who have better embraced mental health awareness. For example, one study sampling hundreds of young adults suggest that most young people report they would not view or treat someone differently if they decided to seek mental health. (12)

It is important to appreciate that anxiety plays a major role in the emergency department and age is a significant factor. Knowing this information affords health care providers the opportunity to better prepare for helping patients with this underlying problem. Health systems can better allocate resources in their emergency departments so that their patients can get the help they need and have more mental health awareness, with emphasis placed on the younger patient population.

Conclusion

There are limitations to this study. Patient self-report could have skewed the validity of results. Inadequate sample size may necessitate expansion of the study duration to enroll sufficient participants. Additionally, it should be made clear that these collective results do not predict the likelihood of GAD among individual patients. As a result, each patient should be assessed independently.

A future direction of this research could incorporate anxiety reference materials in emergency departments and evaluate which factors make it more likely for people to actually seek medical help for their underlying anxiety. This may be a worthy endeavor considering the emergency department is the only source of health care for many patients.

In conclusion, the goal of the study was to determine any association between patient age and diagnosis of Generalized Anxiety Disorder among emergency department patients. It was found that the prevalence of GAD in the emergency department is much higher than previously thought and younger people are more likely to meet criteria for GAD. Using this information, health care providers can better prepare themselves to take care of patients suffering from anxiety and incorporate strategies to make their care more effective in the emergency department setting.

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