Original Article

Assessment of Sociodemographic Profile, Severity, and Suicidality of Generalized Anxiety Disorder Patients Attending a Tertiary Care Hospital

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Abstract

Background: Generalized anxiety disorder (GAD) is characterized by an uncontrollable worry, for most days of a week, lasting more than 6 months, and causing significant impairment. It is usually associated with elements of apprehension, motor tension, and autonomic overactivity. Anxiety disorders have consistently been associated with an increase in suicidal behavior. It is often associated with lethal or near-lethal suicidal acts.

Purpose: The aim of the study was to assess the sociodemographic profile, severity, and suicidality of GAD patients attending a tertiary care hospital.

Materials and Methods: This was a hospital-based cross-sectional study. A total of 42 patients attending psychiatric services of a tertiary care hospital were taken up during the study period. Patients were diagnosed with GAD as per International Classification of Diseases, Revision-10, fulfilling inclusion and exclusion criteria. Sociodemographic parameters were assessed. The severity of GAD was assessed by Hamilton Anxiety Rating Scale (HAM-A). Suicidality was assessed by Mini International Neuropsychiatric Interview 5.0 (for suicidality). The statistical analysis of data was performed using Statistical Package for the Social Sciences for Windows (version 21.0. Chicago, SPSS Inc.) and Microsoft Excel 2010.

Results: The majority (38.10%) of the cases were of moderate severity. The mean HAM-A score was 23.07 ± 7.31. It was found that 11.90% of cases were not suicidal, the most of the cases (42.86%) were moderately suicidal and 14.29% cases were highly suicidal. High suicidal cases had the most elevated HAM-A score. The f-ratio value was 10.33835. By performing an Analysis of Variance test, these findings were statistically found to be significant (p-value <0.05).

Conclusion: Understanding the associations between the individual with anxiety disorder and suicidal behavior may help to reduce suicide rates.

Key words: Generalized anxiety disorder, Hamilton anxiety rating scale, Severity, Sociodemographic profile, Suicidality

INTRODUCTION

Generalized anxiety disorder (GAD) is characterized by an uncontrollable worry, more days than not, lasting >6 months, and causing significant impairment. There must be at least three of the following six symptoms: "Restlessness or feeling agitated or on edge; easily fatigued;

difficulty concentrating or mind going blank; irritability; muscle tension; or disturbed sleep". All three symptoms need not be present simultaneously every day. Most of the time, GAD patients tend to exaggerate the likelihood and severity of the stressor to the point where catastrophe seems possible, likely, and imminent.[1] The anxiety should be generalized and persistent (i.e., free-floating). The sufferer must have primary symptoms for most days for at least several weeks at a time, usually for several months. It is usually associated with elements of apprehension, motor tension, and autonomic overactivity.[2]

GAD is a common condition; its 1-year prevalence range from 3% to 8%. The women to men ratio are

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2:1. A lifetime prevalence is close to 5% with the Epidemiological Catchment Area study suggesting a lifetime prevalence as high as 8%. About 25% of anxiety disorder patients have GAD with onset in late adolescence or early adulthood usually, also commonly seen in older adults. Often coexists with another mental disorders such as social phobia, specific phobia, panic disorder, or a depressive disorder, dysthymic disorder, and substance-related disorders.[3]

Suicide is defined as an act of self-inflicted self-intentioned cessation. It is a condition where a person under life stressors take himself into a cascade of noxious thoughts ultimately leading to a perception that the termination of one's life is the only solution for a seemingly intolerable life situation. In vulnerable individuals, this perceptual constriction gets translated into effective action.[4] According to the definition, suicidality includes completed suicide, suicide attempt, preparatory acts toward imminent suicidal behavior, and suicidal ideation.[5]

Anxiety disorders have frequently been associated with an increase in suicidal behavior in many studies.[6,7] A study shows that individuals who attempt suicide are more likely to be diagnosed with an anxiety disorder than those who do not attempt suicide, hence, concluding that anxiety is a correlate of suicidal behavior as well as a risk factor for suicidal behavior.[8] According to the Beck's cognitive model of suicide; anxiety (and agitation) can serve as an expression of attentional fixation on suicide, which interacts with hopelessness to increase suicide risk.[9] Joiner's interpersonal theory of suicide stated that the fearsome nature of suicidal behavior is consistent with symptoms showing anxious states (e.g., heightened arousal and agitation) and is often associated immediately before lethal or near-lethal suicidal acts.[10] Baumeister described that suicide results due to motivations to escape from unpleasant self-awareness as it generates negative affect, which often includes anxiety.[11] Disorders with anxiety/agitation as characteristic symptoms (i.e., GAD, social phobia, and PTSD) are often predictive of the transition from suicidal ideation to non-lethal suicide attempts.[12] Riskind and colleagues have theorized that a specific cognitive risk factor for anxiety (looming vulnerability), when coupled with hopelessness, enhances urges to escape psychological pain and increases the risk for suicide.[13-15] However, recent studies have provided strong support for elevated suicide risk in individuals with anxiety disorders independent of other psychiatric conditions.[13]

As there are limited studies on GAD and suicidality in our region, it has prompted us to take up this study. The primary purpose of this study was to assess the sociodemographic parameters, severity, and suicidality among GAD patients.

MATERIALS AND METHODS

Study Design and Sample
This was a hospital-based cross-sectional study. The sample for the study was drawn from the patients attending the psychiatry outpatient services in the Department of Psychiatry, at a tertiary care hospital during the study period. The study proposal was submitted to the Institutional Ethics Committee for review and appraisal and the study was undertaken after approval. Written consent was acquired from every participant and they were free to withdraw from the study at any point in time. All consecutive cases fulfilling the inclusion and exclusion criteria were taken for the study. The inclusion criteria were: (a) Patients of all ages, (b) patients of both sexes, and (c) patients diagnosed with GAD as per International Classification of Diseases, Revision-10 (ICD-10). The patients with the following conditions were excluded from the study: (a) Those with comorbid mental illness including mental subnormality, dementia, substance-related disorder, etc., (b) those with comorbid physical illness, (c) patients on cytotoxic chemotherapy, (d) pregnancy, and (e) patients on anxiety-producing drugs. A total of 42 participants/patients were taken up for the study in a duration of 1 year.

Assessment Tools
(a) Semi-structured Proforma for sociodemographic data. This contained the personal identification data of the patients such as the name, age, sex, marital status, religion, residential address, education, occupation, hospital number, and phone number. Records such as the total monthly income of the family and domicile were also obtained. (b) Modified Kuppuswamy's Socioeconomic Status Scale (2017) was used which is based on a composite score considering the education and occupation of the head of the family, also the monthly income of the family. The changes in the scale of income are proportional to the change in the consumer price index numbers for industrial workers (CPI-IW). The latest CPI-(IW) available for January 2017 has been calculated taking 2001 as the base year.[16] (c) The ICD-10 Classification of Mental and Behavioural Disorders. (d) Hamilton Anxiety Rating Scale (HAM-A) was used to assess the severity of anxiety. It is one of the first rating scales developed in the late 1950s to measure the severity of anxiety symptoms (both somatic and cognitive) which is still used in both clinical and research settings. There are 14 items and it takes 10–15 min to complete the interview. Each item is rated from 0 (not present) to 4 (severe) with the total score ranging from 0 to 56. The grading is as follows: (1) ≤17 = Mild Anxiety, (2) 18–24 = Moderate Anxiety, and (3) ≥25 = Severe Anxiety. This is also a clinician-rated scale. Reliability is fairly good and appears to be acceptable based on internal consistency, interrater, and test-retest studies. Validity appears good based on

correlation with other anxiety scales.[17] (e) Mini International Neuropsychiatric Interview (M.I.N.I) 5.0 (for Suicidality) is a short structured diagnostic interview for DSM-IV and ICD-10 psychiatric disorders (major Axis I), developed jointly by psychiatrists and clinicians in the United States and Europe. It was designed for short but accurate structured psychiatric interviews for multicentric clinical trials and epidemiological studies and also has been used as the first step in outcome tracking in non-research clinical settings. Validation and reliability studies have been done comparing the M.I.N.I. to the SCID-P and the CIDI. It has acceptably high validation and reliability scores and can be administered in a much shorter time (mean 18.7 ± 11.6 min and median 15 min) than the above-referenced assessment tools. It can be used by clinicians, after a brief training session. The M.I.N.I. is divided into modules identified by letters, each corresponding to a diagnostic category. For suicidality, there were six questions and the rating is done at the right of each question by circling either YES or NO, and grading is done as low, moderate, and high.[18,19]

Data Analysis

The statistical analysis of data was performed using the computer program, Statistical Package for the Social Sciences (SPSS for Windows, version 21.0. Chicago, SPSS Inc.) and Microsoft Excel 2010. The outcome of continuous measurements is presented as mean ± standard deviation. F-ratio value was calculated and the analysis of variance (ANOVA) test was done. Discrete data are expressed as numbers (%). For analyses, the statistical significance was fixed at a 5% level ($P < 0.05$). The F-ratio is the ratio of two mean square values. F-value is expected to be around 1.0, if the null hypothesis is true. Large F-ratio means that the variation among means is more than you did expect to see. ANOVA is an appropriate method to compare means of more than two groups instead of a t-test. The interest of ANOVA is on the locations of the distributions represented by means too. The relative location of the several group means can be more conveniently identified by variance among the group means than comparing many groups means directly when the number of means is large.[20]

RESULTS

During the study period of 1 year, 42 cases of GAD were taken up. The sociodemographic parameters were assessed and tabulated in Table 1. Among these cases, it was found that the most of the participants were Hindu (90.48%) by religion, whereas 7.14% were Islam and 2.38% were Christian by religion. About 78.57% of cases were from a rural background and 21.43% were from an urban background. The majority of cases of the study group

Table 1: Sociodemographic parameters of cases

Variables	Study Group	
	n=42	%
Religion		
Hindu	38	90.48
Islam	3	7.14
Christian	1	2.38
Others	0	0.00
Locality		
Rural	33	78.57
Urban	9	21.43
Marital Status		
Married	27	64.29
Unmarried	14	33.33
Widow	1	2.38
Separated/divorced	0	0.00
Education		
Professional degree or honors	0	0.00
Graduate or postgraduate	9	21.43
Intermediate or Post High School Diploma	6	14.29
High School Certificate	13	30.95
Middle School Certificate	11	26.19
Primary School Certificate	0	0.00
Illiterate	3	7.14
Occupation		
Profession	6	14.29
Semi-profession	3	7.14
Clerical, shop-owner, and farmer	9	21.43
Skilled worker	11	26.19
Semi-skilled worker	7	16.67
Unskilled worker	0	0.00
Unemployed	6	14.29
Socioeconomic Status		
Upper (I)	3	7.14
Upper Middle (II)	12	28.57
Lower Middle (III)	15	35.71
Upper lower (IV)	12	28.57
Lower	0	0.00

were married (64.29% of cases), 33.33% of cases were unmarried, and 2.38% of cases were widow. The majority of the study groups were high school graduates (30.95% of cases). About 26.19% were educated up to middle school, 21.43% were graduates or post-graduates, 14.29% were intermediate or post-high school diploma, and 7.14% were illiterate. About 26.19% were skilled workers, 21.43% were clerical, shop owner or farmer, 16.67% were semi-skilled workers, 14.29% were professional workers, another 14.29% were unemployed, and 7.14% were semi-professional workers. In our study, it has been found that 35.71% were from the lower middle class (III), 28.57% were from the upper-middle class (II), another 28.57% were from the upper lower class (IV), and 7.14% were from upper class (I).

The distribution of GAD cases according to the severity is tabulated in Table 2. It was found that most (38.10%) of the cases were of moderate severity followed by 35.71% who were severe cases and 26.19% were mild cases. Here, the mean HAM-A score was 23.07 ± 7.31. The distribution of GAD cases according to the severity of is tabulated in Table 3. It

was found that 11.90% of cases were not suicidal, 30.95% of cases had low suicidality, 42.86% of cases were moderately suicidal, and 14.29% of cases were highly suicidal.

The relationship between severity of GAD cases and suicidality is tabulated in Table 4. In this study, cases having no suicidality had a mean HAM-A score of 19.00 ± 3.81, low suicidality had a mean HAM-A score of 17.08 ± 3.30, moderate suicidality had a mean HAM-A score of 26.50 ± 7.33, and high suicidality had a mean HAM-A score of 29.17 ± 4.54. Hence, high suicidal cases had the most elevated HAM-A score, followed by moderately suicidal cases. The f-ratio value is 10.33835. By performing an ANOVA test, these findings were statistically found to be significant ($P < 0.05$).

DISCUSSIONS

This study was a sincere attempt to assess sociodemographic parameters as well as to assess the relationship of severity

Table 2: Distribution of generalized anxiety disorder cases according to the severity (as per HAM-A score)

Severity of GAD	HAM–A* Score	Study Group	
		Number (*n*)	Percentage
Mild	≤17	11	26.19
Moderate	18–24	16	38.10
Severe	≥25	15	35.71
Total		42	100.00
Mean±S.D. (HAM-A Score)		23.07±7.31	

*HAM-A: Hamilton anxiety rating scale (total score ranging from 0 to 56), GAD: Generalized anxiety disorder

Table 3: Distribution of generalized anxiety disorder cases according to the severity of suicidality (MINI 5.0)

Severity of suicidality (M.I.N.I. 5.0)**	Study Group	
	Number (*n*)	Percentage
No Suicidality	5	11.90
Low	13	30.95
Moderate	18	42.86
High	6	14.29
Total	42	100.00

**MINI 5.0: Mini-international neuropsychiatric interview

and suicidality of GAD cases. At the end, data related to 42 GAD patients were interpreted. The majority of the participants were Hindu by religion due to the predominance of the Hindu population in the region. However, it was found in various studies that religion in general, along with spirituality, faith, and prayer, was associated with reduced anxiety/stress.[21] Shared practices and having meaning and purpose in life tend to be stronger predictors for mental well-being than the content and strength of one's beliefs. Many studies show lower levels of anxiety among more religious people; a large number of studies reported no association; several studies reported mixed or complex results, whereas ten studies suggest greater severity of anxiety among the more religious.[22]

The majority of the cases were from rural backgrounds in our study which might be because the location of the hospital is in the vicinity of the rural population, contrary to a study where the urban communities had higher prevalence rates (35.7% vs. 13.9%; $P < 0.01$) than rural communities.[23] In a meta-analysis, by Ganguli in 2000, it was found that anxiety neurosis was reported to be marginally higher in prevalence in urban settings than in rural settings (106:100).[24] However, there are no specific study findings on GAD.

The most of the cases were married in our study, which indicates that marriage is not a protective factor against the development of GAD. Earlier studies have suggested that individuals with GAD report significantly higher levels of marital distress and are at a greater risk for divorce.[25] Studies also showed that relationship problems among GAD patients predict poor treatment response and long-term outcomes. In a study, it was found that GAD was significantly associated with the likelihood of entering into a marriage-like relationship. The results support the continued investigation into the association between couple functioning and the onset, course, and treatment of GAD, and suggest that couple therapy could be an untapped resource for the treatment.[26] The majority of the study group were high school graduates only. In a study by Remes *et al.*, it was found that GAD is more prevalent among the high education group which is contrary to our study.[27] Students with anxiety disorder lack interest in learning, poor performance in examinations, and on assignments.[28] Low educational levels were significantly associated with both anxiety and depression.[29]

Table 4: Relationship between severity of suicidality (MINI 5.0) and mean HAM-A scores

Severity of suicidality (M.I.N.I. 5.0)	HAM-A Scores (Mean±SD)	F-value***	P-value**** (<0.05)
No Suicidality	19.00±3.81	10.33835	0.000041
Low	17.08±3.30		
Moderate	26.50±7.33		
High	29.17±4.54		

***F-value: Ratio of two mean square values, expected to be around 1.0, if the null hypothesis is true, ****P<0.05, MINI: Mini-international neuropsychiatric interview, HAM-A: Hamilton anxiety rating scale

In this study, majority were skilled workers. In a study conducted by Mallik *et al.,* it was found that anxiety was most common among unskilled workers and businessmen.[30] According to the Kuppuswamy's socioeconomic status scale (modified), 35.71% were from a lower middle class (III), 28.57% were from an upper middle class (II), another 28.57% were from an upper lower class (IV), and 7.14% were from the upper class (I). In a study by Mallik *et al*, the most of the patients suffering from anxiety belonged to socioeconomic status IV, followed by socioeconomic V and VI, and 6% belonged to the upper class, according to the modified B.G Prasad Scale.[30]

In our study, it was found that the majority of GAD cases were moderate in severity, followed by severe cases and mild cases, which is consistent with the findings by Rollman *et al*, who found that 59% patients with GAD reported a moderate or greater level of anxiety symptoms on the Structured Interview Guide for the HAM-A.[31]

We have also found that the majority of GAD patients were moderately suicidal, followed by low suicidality, severe suicidality, and no suicidality, respectively, which is, however, a unique finding as no study has compared the severity of suicidality in patients of GAD. People with threshold or subthreshold GAD were significantly more likely to report suicidal ideation compared with people who did not have GAD.[32] In our study, high suicidal cases of GAD had the most elevated HAM-A score, which is consistent with the findings of Choi *et al.*, who suggested that an increase of significant suicidal ideation was associated with more severe anxiety symptoms.[33] In another study, MINI interview was used to screen medical students, and a significant number have showed GAD (32.7%) and risk of suicide (30.2%).[34] In an Indian study, 20.2% participants were found to have anxiety disorders (moderate-to-severe) and 29.6% students were found to have a suicidal risk.[35]

CONCLUSION

The present study demonstrated that high suicidal cases of GAD had the most elevated HAM-A score, that is, increase in severity of GAD causes an increase in severity of suicidality. Understanding the associations between the individual with anxiety disorders and suicidal behaviors may help to reduce suicide rates. Hence, clinicians must carefully assess for suicidality among patients presenting with anxiety problems and treat timely.

LIMITATIONS OF THE STUDY

1. This was a one-time cross-sectional assessment study that lacked follow-up. It would be better if the GAD patients would have also been evaluated for the relationship between severity and suicidality before and after pharmacotherapy to establish whether severity can be used as an indicator of suicidality
2. The sample size of the study groups was relatively small and this study is hospital-based. Hence, the findings cannot be generalized to a larger community population
3. The study groups were not compared to age- and sex-matched control groups
4. Comorbidities were not taken into consideration.

STRENGTHS OF THE STUDY

This study has evaluated the severity and suicidality of GAD cases and the relationship between severity and suicidality was established. There is a limited research on this topic in our country. To the best of our knowledge, no study to date studied the relationship between severity of GAD and suicidality.

FUTURE IMPLICATIONS

The present study has revealed the relation between severity of GAD and suicidality. Hence, further research has to be carried out to use severity grading of GAD as an indicator of suicidality, which will be helpful in early detection and prevention of suicide in GAD patients.

ACKNOWLEDGMENT

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