# **ORIGINAL RESEARCH**

# Assessment of Sociodemographic and Clinical Factors Associated with Panic Disorder, With and Without Agoraphobia

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Received: 11 February, 2017

Accepted: 18 March, 2017

#### ABSTRACT

**Background:** Panic Disorder (PD) is frequently associated with Agoraphobia, which increases the clinical severity and chronicity of the illness. Identifying the sociodemographic and clinical predictors of Agoraphobia in PD patients can help guide targeted interventions.

Aim: To assess and compare the sociodemographic and clinical variables related to PanicDisorder with and without Agoraphobia.

**Material and Methods:** This cross-sectional, observational study was conducted in the Department of Psychiatry of a tertiary care hospital. A total of 80 patients aged 18–60 years, diagnosed with Panic Disorder as per DSM-5 criteria, were recruited. They were divided into Group A (n = 40, PD without Agoraphobia) and Group B (n = 40, PD with Agoraphobia). Sociodemographic and clinical data were collected using a semi-structured proforma. Panic severity and anxiety levels were assessed using the Panic Disorder Severity Scale (PDSS) and Hamilton Anxiety Rating Scale (HAM-A), respectively. Data were analyzed using SPSS v21.0; p < 0.05 was considered statistically significant.

**Results:** The mean age of participants was  $32.50 \pm 8.40$  years (Group A) and  $34.20 \pm 9.10$  years (Group B). Group B had significantly longer illness duration  $(4.50 \pm 3.10$  years vs.  $3.10 \pm 2.40$  years; p = 0.04) and higher frequency of panic attacks  $(6.50 \pm 2.30 \text{ vs. } 4.20 \pm 1.80; p = 0.001)$ . PDSS and HAM-A scores were significantly higher in Group B ( $16.30 \pm 5.10$  and  $23.70 \pm 7.20$ , respectively) compared to Group A ( $11.80 \pm 4.20$  and  $18.50 \pm 6.30; p < 0.001$ ). Logistic regression showed higher PDSS (OR = 3.25, p = 0.003) and HAM-A (OR = 2.70, p = 0.02) as strong predictors of Agoraphobia. Multiple regression confirmed duration of illness, PDSS, and HAM-A scores as independent predictors (adjusted R<sup>2</sup> = 0.38, p < 0.001).

**Conclusion:** Patients with PD and Agoraphobia exhibit greater illness severity and symptom burden compared to those without Agoraphobia. Higher panic severity and anxiety levels were key predictors. Early recognition and treatment of severe symptoms may prevent progression to Agoraphobia.

**Keywords:** Panic Disorder; Agoraphobia; Panic Disorder Severity Scale; Hamilton Anxiety Scale; Predictors of Agoraphobia.

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# **INTRODUCTION**

Panic disorder (PD) is a prevalent and disabling psychiatric condition characterized by recurrent, unexpected panic attacks and persistent concern about their recurrence. Panic attacks are sudden episodes of intense fear or discomfort, accompanied by somatic and cognitive symptoms such as palpitations, sweating, trembling, shortness of breath, and fear of losing control or dying. The disorder often results in significant distress and impairment in social, occupational, or other important areas of functioning. Epidemiological studies indicate that PD affects approximately 2–3% of the

general population, with a higher prevalence among females compared to males.<sup>1</sup>

A significant proportion of individuals with PD develop agoraphobia, а condition also characterized by marked fear or avoidance of situations where escape might be difficult or help unavailable in the event of a panic attack. These include crowded places, public transport, or open spaces.<sup>2</sup>The co-occurrence of agoraphobia with PD results in greater symptom severity, poorer quality of life, and a more complicated clinical course compared to PD without agoraphobia.3 Despite the overlapping features, PD with agoraphobia and PD without agoraphobia may represent distinct subtypes with differing sociodemographic and clinical characteristics.<sup>4</sup> Understanding the sociodemographic correlates of PD, including age, gender, marital status, educational level, and employment status, is critical to identify high-risk populations and tailor preventive and therapeutic interventions. Research has consistently demonstrated that PD commonly emerges in early adulthood, with the mean age of onset around the late twenties to early thirties.1 Women are almost twice as likely as men to be diagnosed with PD, though the reasons for this gender disparity remain unclear.<sup>2</sup> Some hypotheses suggest a role of hormonal influences, greater sensitivity to internal bodily sensations, and differences in help-seeking behaviors.5Educational and occupational factors also appear to influence the manifestation and course of PD. Individuals with lower educational attainment and those who are unemployed or underemployed report higher rates of panic attacks and greater functional impairment.3 Family and social support play a protective role; conversely, those with poor interpersonal relationships or significant life stressors are more vulnerable to panic symptoms.<sup>4</sup> The association between bereavement and panic symptoms has been highlighted in studies demonstrating that the loss of a loved one, particularly by suicide, can precipitate panic attacks or worsen the clinical trajectory of PD.5Clinical variables of PD include the frequency and intensity of panic attacks, presence of anticipatory anxiety, extent of avoidance behaviors, and comorbid psychiatric conditions such as depression, generalized anxiety disorder, and substance abuse. Depression is a particularly common comorbidity in PD patients and can exacerbate the severity of panic symptoms, complicate treatment, and increase the risk of suicidal ideation.6 Studies suggest that almost half of

patients with PD may experience a major depressive episode at some point during their illness course.3Genetic and neurobiological factors have also been implicated in the etiology of PD. Twin and family studies have consistently demonstrated a genetic predisposition for PD and agoraphobia.<sup>7</sup> Molecular genetic research has identified specific polymorphisms, such as the 1019C>G variant of the 5-HT1A receptor gene, which may increase susceptibility to panic disorder with agoraphobia.<sup>6</sup> Neuroimaging studies indicate abnormalities in brain regions involved in fear processing, including the amygdala, hippocampus, and prefrontal cortex.<sup>8</sup>From a diagnostic perspective, the changes introduced in DSM-5 have helped to clarify the diagnostic boundaries between PD and agoraphobia. In earlier versions of the DSM, agoraphobia was conceptualized only as a specifier for PD. However, DSM-5 recognizes agoraphobia as a distinct disorder that can occur with or without panic disorder.9 This revision underscores the need for clinicians to carefully evaluate patients for the presence of both conditions as they may require different therapeutic approaches. Patients with PD and coexisting agoraphobia tend to have a more chronic and disabling course, with higher levels of anticipatory anxiety, greater avoidance of daily activities, and increased reliance on safety behaviors.8

The development of agoraphobia in individuals with PD is often seen as a predictable progression. The initial spontaneous panic attacks create fear of recurrence, leading to avoidance of places or situations associated with prior attacks. Over time, this avoidance can generalize to multiple contexts, culminating in severe agoraphobic restriction.<sup>10</sup> This fearavoidance cycle becomes self-reinforcing and significantly limits the patient's functioning and quality of life.4Several studies have examined the comparative sociodemographic and clinical profiles of PD with and without agoraphobia. Findings suggest that patients with PD and agoraphobia are more likely to be female, older at the time of seeking treatment, and have longer illness duration compared to those with PD alone.8 They also tend to report higher panic severity, more frequent panic attacks, and greater levels of disability and distress.<sup>10</sup> However, the extent to which these factors reflect distinct diagnostic entities or a spectrum of severity within PD remains an area of ongoing research.<sup>7</sup>

# AIM AND OBJECTIVES

# Aim

To investigate and compare the sociodemographic and clinical characteristics of patients diagnosed with Panic Disorder (PD), with and without Agoraphobia, and to assess the severity of panic and anxiety symptoms among these groups.

# Objectives

- 1. To compare sociodemographic variables (such as age, gender, marital status, education level, employment status, and socioeconomic background) between patients with PD with Agoraphobia and those without.
- 2. To evaluate and compare the severity of panic symptoms using the Panic Disorder Severity Scale (PDSS) in both groups.
- 3. To assess and compare the levels of anxiety using the Hamilton Anxiety Rating Scale (HAM-A) among patients with and without Agoraphobia.
- 4. To determine the association of Agoraphobia with the severity of panic and anxiety symptoms in patients diagnosed with PD.
- 5. To identify the prevalence of psychiatric comorbidities and their impact on the severity of symptoms in both groups.

# MATERIAL AND METHODS

#### **Study Design**

A cross-sectional, observational study aimed at comparing sociodemographic and clinical variables in patients diagnosed with Panic Disorder (PD), with and without Agoraphobia.

# Study Population

The study included 80 patients aged between 18 to 60 years, diagnosed with Panic Disorder (with or without Agoraphobia) as per the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5) criteria. Participants were consecutively recruited from the outpatient psychiatric clinic of a tertiary care teaching hospital.

# **Study Place**

The study was conducted in the **Department of Psychiatry**in collaboration with Department of Community Medicine Saraswathi Institute of Medical Sciences, Hapur, Uttar Pradesh, India.

#### **Study Duration**

The study was carried out over a period of one years, from January 2016 to December 2016 after receiving Institutional Ethics Committee approval, allowing sufficient time for recruitment, evaluation, and analysis.

# **Ethical Considerations**

Prior to the commencement of the study, approval was obtained from the Institutional Ethics Committee (IEC). Written informed consent was secured from all participants before their enrollment in the study.

#### **Inclusion Criteria**

- Patients aged between 18 to 60 years.
- Diagnosis of Panic Disorder with or without Agoraphobia as per DSM-5 criteria.
- Both male and female patients.
- Ability and willingness to provide informed consent.

#### **Exclusion Criteria**

- Presence of comorbid severe psychiatric disorders such as schizophrenia, bipolar disorder, or intellectual disability.
- Severe medical illnesses that could interfere with study participation.
- History of substance use disorder (excluding nicotine).
- Inability or unwillingness to provide informed consent.

# Sample Classification

Participants were divided into two groups based on clinical evaluation:

- **Group A**: 40 patients diagnosed with Panic Disorder without Agoraphobia.
- **Group B**: 40 patients diagnosed with Panic Disorder with Agoraphobia.

# Methodology

- Data Collection: A semi-structured proforma was utilized to gather detailed sociodemographic information, including age, gender, marital status, education level, employment status, socioeconomic background, and family history of psychiatric disorders.
- **Clinical Assessment**: Trained psychiatrists conducted comprehensive clinical interviews to evaluate clinical variables.
- **Diagnostic Confirmation**: Each patient underwent a structured clinical interview to confirm the diagnosis of Panic Disorder with or without Agoraphobia based on DSM-5 criteria.
- Severity Assessment:
- The **Panic Disorder Severity Scale (PDSS)** was administered to measure the severity of panic symptoms.
- The **Hamilton Anxiety Rating Scale (HAM-A)** was used to assess associated anxiety levels.
- Agoraphobia Assessment: The presence or absence of Agoraphobia was determined

through clinical assessment in accordance with DSM-5 guidelines.

#### **Outcome Measures**

- Severity of panic symptoms as measured by the PDSS.
- Severity of anxiety symptoms as assessed by the HAM-A.
- Sociodemographic variables and their association with the presence or absence of Agoraphobia.

#### **Statistical Analysis**

- Data analysis was performed using SPSS software version 21.0.
- Descriptive statistics were employed to summarize sociodemographic variables.

- Independent sample t-tests were used to compare continuous variables between the two groups.
- Chi-square tests were applied to compare categorical variables.
- A p-value of less than 0.05 was considered statistically significant.

#### RESULTS

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The present study included 80 patients diagnosed with Panic Disorder (PD), evenly divided into two groups: 40 patients with Panic Disorder without Agoraphobia (Group A) and 40 with Panic Disorder with Agoraphobia (Group B).

Variable	Group A: Panic Disorder	Group B: Panic Disorder	p-value
	without Agoraphobia	with Agoraphobia	
	( <b>n</b> = 40)	( <b>n</b> = 40)	
Age (mean $\pm$ SD, years)	$32.50\pm8.40$	$34.20\pm9.10$	0.38
Gender (Male/Female)	18 (45.00%) / 22 (55.00%)	20 (50.00%) / 20 (50.00%)	0.65
Marital Status (Married)	26 (65.00%)	28 (70.00%)	0.61
Education (≥Graduate)	23 (57.50%)	18 (45.00%)	0.24
Employment	25 (62.50%)	19 (47.50%)	0.18
(Employed)			
Socioeconomic Status	28 (70.00%)	27 (67.50%)	0.79
(Middle Class)			
Family History of	11 (27.50%)	17 (42.50%)	0.14
Psychiatric Illness			

Table 1: Sociodemographic Profile of Study Participant	ts (n = 80)
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Table 1 show that the mean age of patients in Group A was  $32.50 \pm 8.40$  years, while it was  $34.20 \pm 9.10$  years in Group B, with no statistically significant difference (p = 0.38). Gender distribution was also similar between the groups; Group A had 18 males (45.00%) and 22 females (55.00%), compared to 20 males (50.00%) and 20 females (50.00%) in Group B (p = 0.65) [figure I]. Marital status showed that

26 (65.00%) patients in Group A and 28 (70.00%) patients in Group B were married (p = 0.61). Educational levels were comparable with 23 (57.50%) graduates or higher in Group A and 18 (45.00%) in Group B (p = 0.24). Employment status revealed that 25 (62.50%) patients in Group A were employed versus 19 (47.50%) in Group B (p = 0.18). The majority in both groups belonged to the middle socioeconomic class

(70.00% in Group A vs. 67.50% in Group B; p = 0.79). A greater proportion of patients in Group B had a family history of psychiatric illness

(42.50%) compared to Group A (27.50%), though the difference did not reach statistical significance (p = 0.14).

Table 2. Comparison of Chincal Variables between the 1 wo Groups				
Clinical Variable	Group A: Panic Disorder	Group B: Panic Disorder	p-value	
	without Agoraphobia	with Agoraphobia		
	( <b>n</b> = 40)	( <b>n</b> = 40)		
Age at Onset of Panic	$29.80 \pm 7.20$	$30.50\pm7.50$	0.68	
Disorder (years, mean ±				
SD)				
Duration of Illness (years,	$3.10 \pm 2.40$	$4.50 \pm 3.10$	0.04*	
mean $\pm$ SD)				
Number of Panic Attacks	$4.20 \pm 1.80$	$6.50 \pm 2.30$	0.001*	
per Month (mean $\pm$ SD)				
Psychiatric Comorbidity	8 (20.00%)	13 (32.50%)	0.18	
Medical Comorbidity	6 (15.00%)	9 (22.50%)	0.38	

 Table 2: Comparison of Clinical Variables between the Two Groups

\*Significant p-values (<0.05)

Table 2 show that the mean age of onset of panic disorder was similar between the groups  $(29.80 \pm 7.20 \text{ years in Group A and } 30.50 \pm 7.50 \text{ years in Group B; } p = 0.68)$ . However, the duration of illness was significantly longer in Group B (4.50  $\pm$  3.10 years) compared to Group A (3.10  $\pm$  2.40 years; p = 0.04). The frequency of panic attacks was notably higher in Group B, with an average

of  $6.50 \pm 2.30$  attacks per month compared to  $4.20 \pm 1.80$  in Group A (p = 0.001). Psychiatric comorbidity was found in 8 (20.00%) patients in Group A and 13 (32.50%) in Group B (p = 0.18). Medical comorbidity was noted in 6 (15.00%) patients in Group A and 9 (22.50%) patients in Group B (p = 0.38), neither reaching statistical significance.

Scale	Group A: Panic Disorder without Agoraphobia (n = 40)	Group B: Panic Disorder with Agoraphobia (n = 40)	p-value
Panic Disorder Severity Scale (PDSS Score, mean ± SD)	$11.80 \pm 4.20$	$16.30 \pm 5.10$	0.0003*
Hamilton Anxiety Rating Scale (HAM-A Score, mean ± SD)	$18.50 \pm 6.30$	23.70 ± 7.20	0.0007*

# Table 3: Severity of Panic Symptoms and Anxiety Levels

\*Significant p-values (<0.05)

Table 3 show that patients with panic disorder and Agoraphobia (Group B) had significantly higher PDSS scores ( $16.30 \pm 5.10$ ) compared to those without Agoraphobia ( $11.80 \pm 4.20$ ), with a highly significant p-value of 0.0003. Anxiety levels assessed by the HAM-A scale were also significantly greater in Group B ( $23.70 \pm 7.20$ ) compared to Group A ( $18.50 \pm 6.30$ ; p = 0.0007). These findings indicate that the presence of Agoraphobia is associated with increased severity of panic and anxiety symptoms.

Table 4: Relationsh	p of Agora	phobia Presence	e with Sociodem	ographic an	d Clinical Factors
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Variable	Odds Ratio (OR)	95% Confidence Interval (CI)	p-value
Female Gender	1.22	0.53 – 2.83	0.64
Married Status	1.29	0.52 - 3.21	0.58

Family History of Psychiatric Illness	2.00	0.80 - 5.00	0.13
Higher PDSS Score	3.25	1.50 - 7.00	0.003*
Higher HAM-A Score	2.70	1.20 - 6.20	0.02*

\*Significant p-values (<0.05)

Table 4 show that the Logistic regression analysis showed that neither female gender (OR = 1.22, p = 0.64), marital status (OR = 1.29, p = 0.58), nor family history of psychiatric illness (OR = 2.00, p = 0.13) significantly predicted the presence of Agoraphobia. However, higher PDSS scores (OR = 3.25, 95% CI: 1.50-7.00, p = 0.003) and higher HAM-A scores (OR = 2.70, 95% CI: 1.20-6.20, p = 0.02) were found to be strong, statistically significant predictors of Agoraphobia among PD patients.

Table 5: Multiple Regression Analysis for Predictors of Agoraphobia among Patients with Pani	ic
Disorder	

β Coefficient	Standard Error	p-value
0.02	0.03	0.44
0.15	0.12	0.22
0.09	0.04	0.03*
0.17	0.13	0.19
0.38	0.10	0.001*
0.31	0.11	0.004*
	β Coefficient           0.02           0.15           0.09           0.17           0.38           0.31	β CoefficientStandard Error0.020.030.150.120.090.040.170.130.380.100.310.11

Model Summary: Adjusted  $R^2 = 0.38$ , F(6,73) = 9.20, p < 0.001,

\*Significant p-values (<0.05)

Table 5 show that a multiple regression analysis was performed to further identify independent predictors of Agoraphobia. Duration of illness was significantly associated with Agoraphobia (B = 0.09, p = 0.03). Additionally, both panic severity (PDSS score;  $\beta = 0.38$ , p = 0.001) and anxiety levels (HAM-A score;  $\beta = 0.31$ , p = 0.004) emerged as independent significant predictors. Gender (p = 0.22), age (p = 0.44), and family history of psychiatric illness (p = 0.19) were not significant predictors. The overall model showed a good fit, with an adjusted R<sup>2</sup> of 0.38 (F(6,73) = 9.20, p < 0.001), suggesting that these clinical factors explain 38% of the variance in the presence of Agoraphobia among Panic Disorder patients.

# DISCUSSION

In the present study, the mean age of patients with panic disorder without Agoraphobia (Group A) was  $32.50 \pm 8.40$  years, while it was  $34.20 \pm 9.10$  years in those with Agoraphobia (Group B), with no significant difference (p = 0.38). This closely resembles the mean onset age of 32.3 years reported by Kessler et al. in their National Comorbidity Survey Replication study, which also noted no major gender difference in the mean age of panic disorder onset.<sup>11</sup> Our study had a female predominance of 55.00% in Group A and 50.00% in Group B, aligning with Kessler et al. who reported a female to male ratio of

approximately 2:1.<sup>11</sup> Family history of psychiatric illness was seen in 27.50% of Group A and 42.50% of Group B patients, comparable to Massion et al. who observed family psychiatric history in 39% of panic disorder patients, though they too reported it was not a definitive predictor for Agoraphobia.<sup>12</sup>

The duration of illness in our study was significantly longer in Group B (4.50  $\pm$  3.10 years) compared to Group A  $(3.10 \pm 2.40 \text{ years})$ ; p = 0.04). Similar findings were reported by Roy-Byrne et al., who observed longer illness duration of  $4.9 \pm 3.3$  years in patients with panic disorder and Agoraphobia compared to  $2.8 \pm 2.1$ in those without Agoraphobia.13 years Additionally, in our study, the frequency of panic attacks was higher in Group B ( $6.50 \pm 2.30$  per month) versus Group A ( $4.20 \pm 1.80$  per month; p = 0.001). This correlates with the study by Schmidt et al., who reported that patients with Agoraphobia experienced on average 6.8 panic attacks per month compared to 4.3 attacks per month in those without Agoraphobia.<sup>14</sup>

In terms of severity, the mean Panic Disorder Severity Scale (PDSS) score was significantly higher in Group B (16.30  $\pm$  5.10) compared to Group A (11.80  $\pm$  4.20; p = 0.0003). Our data are very similar to the findings of Barlow et al., who reported mean PDSS scores of 15.9  $\pm$  4.8 for patients with Agoraphobia and 11.5  $\pm$  4.1 for those without Agoraphobia.<sup>15</sup> Anxiety levels measured by HAM-A were also significantly higher in Group B (23.70  $\pm$  7.20) than Group A (18.50  $\pm$  6.30; p = 0.0007). These results echo Barlow et al. who reported mean HAM-A scores of 24.5  $\pm$  6.9 in Agoraphobia patients versus 18.7  $\pm$  5.6 in those without.<sup>15</sup>

Our logistic regression showed that higher PDSS scores (OR = 3.25, 95% CI 1.50-7.00; p = 0.003) and HAM-A scores (OR = 2.70, 95% CI 1.20-6.20; p = 0.02) were strong predictors of Agoraphobia. These findings support the conclusions of Bruce et al., who found that patients with severe symptom scores had a 3.2-fold greater risk of developing Agoraphobia. Similarly, they reported that comorbid anxiety raised the risk of Agoraphobia by approximately 2.5 times, comparable to our results.<sup>16</sup>

Our multiple regression model revealed that duration of illness ( $\beta = 0.09$ , p = 0.03), panic severity (PDSS;  $\beta = 0.38$ , p = 0.001), and anxiety level (HAM-A;  $\beta = 0.31$ , p = 0.004) were significant independent predictors of Agoraphobia, explaining 38% of variance (adjusted R<sup>2</sup> = 0.38). This is similar to the findings of Craske et al., whose models accounted for 35% of the variance in Agoraphobia presence among PD patients, with duration of illness and severity of panic symptoms being the strongest predictors.<sup>17</sup>

Finally, no significant association was found between Agoraphobia and gender (p = 0.22), age (p = 0.44), or family history of psychiatric illness (p = 0.19) in our study. This parallels the results of Wittchen et al., whose longitudinal data showed no significant influence of demographic factors on Agoraphobia development; rather, they emphasized that symptom severity and chronicity played key roles in the progression of panic disorder into Agoraphobia.<sup>18</sup>

#### LIMITATIONS OF THE STUDY

- **Sample Size**: The relatively small sample size (80 participants) may limit the generalizability of the findings.
- **Study Design**: Being a cross-sectional study, it cannot establish causal relationships between variables.
- **Single-Center Study**: Conducted in a single tertiary care teaching hospital, which may not reflect the broader population.
- **Potential Bias**: Consecutive sampling from an outpatient clinic may introduce selection bias.

• Assessment Tools: Reliance on selfreported measures and clinical interviews may be subject to reporting bias.

# CONCLUSION

This study highlights that patient with panic disorder and comorbid Agoraphobia experience a longer illness duration, higher frequency of panic attacks, and greater severity of panic and anxiety symptoms compared to those without Agoraphobia. Higher PDSS and HAM-A scores were significant predictors of Agoraphobia. Early identification of symptom severity and timely intervention may help reduce the progression and burden of Agoraphobia among individuals with panic disorder.

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