Suicidal Ideation Frequency Across Generalized Anxiety Disorder, Major Depressive Disorder, and Comorbid Cohorts: The Role of Symptom Severity, Diagnosis, and Undetected Disorder Burden

Erin Ferries[1], Derek Louie[1], Phong Duong[1], Robin Tan[1], Kathy Annunziata[2], Martine Maculaitis[2], Dan Karlin[1]

[1] *Definium Therapeutics, New York, NY*

[2]*Oracle Life Sciences, Austin, TX*

Background

- Generalized Anxiety Disorder (GAD) and Major Depressive Disorder (MDD frequently co-occur,[1] and both are linked to elevated suicidal ideation (SI).[2]
- SI is also associated with greater anxiety and depressive symptom severity.[3] However, the collective contributions of diagnostic status and symptom severity to SI are not well-understood.
- Greater elucidation of these relationships is needed to inform targeted anxiety and depressive symptom severity assessment and SI risk reduction strategies.

Objective

- To examine whether SI frequency is driven by diagnostic status or symptom severity across US adults with GAD-only, MDD-only, and comorbid GAD-MDD.

Methods

Study design and sample

- This was a cross-sectional retrospective study that included data from all participants in the 2025 US National Health and Wellness Survey (NHWS) who met the eligibility criteria for one of the 3 study cohorts:
  - GAD-only: Has GAD diagnosis + does not have MDD diagnosis.
  - MDD-only: Has MDD diagnosis + does not have GAD diagnosis.
  - Comorbid GAD-MDD: Has GAD diagnosis + has MDD diagnosis.
- The NHWS is an annual internet-based survey; all data are self-reported. Recruitment is designed to represent the general US adult population on age (≥18 years), race/ethnicity, and gender distributions.

Variables

- Demographics: Age, sex, race/ethnicity.
- Anxiety symptoms: 7-Item Generalized Anxiety Disorder Scale (GAD-7). Recall period of past 2 weeks; scores range from 0-21, with higher scores indicating more severe symptoms; scores of 0-4, 5-9, 10-14, and 15-21 reflect no/minimal, mild, moderate, and severe anxiety symptoms, respectively.[4]
- Depressive symptoms: 8-Item Patient Health Questionnaire (PHQ-8). Recall period of past 2 weeks; scores range from 0-24, with higher scores indicating more severe symptoms; scores of 0-4, 5-9, 10-14, 15-19, and 20-24 represent no/minimal, mild, moderate, moderately severe, and severe depressive symptoms, respectively.[5] Because SI was the outcome variable, PHQ-8 was used to assess severity; PHQ-8 is identical to PHQ-9, but it excludes the SI item.
- SI: Item 9 of PHQ-9. Defined as responses of 'several days', 'more than half the days', or 'nearly every day' to the question "Over the last 2 weeks, how often have you been bothered by thoughts that you would be better off dead, or of hurting yourself in some way?"[6]

Data Analysis

- This descriptive analysis included frequencies and percentages for all study variables.
- SI frequency was stratified by anxiety and depressive severity level for each cohort.

Results

Sample Characteristics

- Overall, 75,005 adults in the total NHWS sample were included (**Table 1**).
- Of the total sample, 2.3%, 13.8%, and 7.3% were diagnosed with GAD-only, MDD-only, and comorbid GAD-MDD, respectively.
- Across cohorts, approximately half of the participants were aged 18-44 years, and the majority were female and White.
- The comorbid GAD-MDD cohort was slightly younger than the other cohorts and had the highest proportion of females.

Table 1 | Sample Characteristics

	GAD-Only N=1,758 n (%)	MDD Only N=10,329 n (%)	GAD-MDD N=5,495 n (%)
Age Group (years)			
18-34	482 (27.4)	2,489 (24.1)	1,722 (31.3)
35-44	340 (19.3)	2,190 (21.2)	1,018 (18.5)
45-54	313 (17.8)	1,972 (19.1)	1,026 (18.7)
55-64	240 (13.7)	1,769 (17.1)	1,006 (18.3)
≥65	383 (21.8)	1,909 (18.5)	723 (13.2)
Female	1,184 (67.4)	5,795 (56.1)	4,202 (76.5)
Race/Ethnicity			
White	1,277 (72.6)	6,261 (60.6)	3,717 (67.6)
African American/Black	140 (8.0)	1,989 (19.3)	617 (11.2)
American Indian	19 (1.1)	108 (1.1)	61 (1.1)
Asian	35 (2.0)	208 (2.0)	85 (1.6)
Hispanic	207 (11.8)	1,398 (13.5)	715 (13.0)
Mixed or Other Race/Ethnicity	80 (4.6)	365 (3.5)	300 (5.5)

GAD: generalized anxiety disorder; MDD: major depressive disorder.

Symptom Burden

- **Figure 1** shows the percentage of each cohort reporting anxiety (GAD-7) (A) and depressive (PHQ-8) (B) symptoms by severity level.
- Patients with comorbid GAD-MDD exhibited substantially greater symptom burden than either disorder alone.
- Undiagnosed cross-disorder symptom burden was common: 28.2% of GAD-only patients reported moderate-or-above depressive symptoms, while 37.6% of MDD-only patients reported moderate-or-above anxiety symptoms.

Figure 1 | Anxiety (GAD-7) (**A**) and Depressive (PHQ-8) (**B**) symptom severity, by cohort

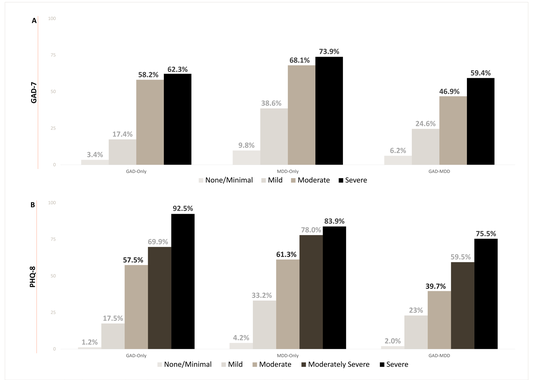


GAD: generalized anxiety disorder; GAD-7: 7-Item Generalized Anxiety Disorder Scale; MDD: major depressive disorder; PHQ-8: 8-Item Patient Health Questionnaire.

Prevalence of Any SI (Several Days or Greater) and Symptom Severity

- Any SI increased substantially with increasing anxiety (**Figure 2A**) and depressive (**Figure 2B**) symptom severity across all cohorts.
- The highest SI rates were observed among patients with severe symptoms regardless of diagnostic cohort.
- Despite greater symptom burden, the comorbid GAD-MDD cohort generally exhibited lower SI prevalence than the GAD-only and MDD-only cohorts at comparable symptom severity levels.

Figure 2 | Prevalence of Any SI (Several Days or Greater) by Anxiety (GAD-7) (**A**) and Depressive (PHQ-8) (**B**) Symptom Severity, by Cohort

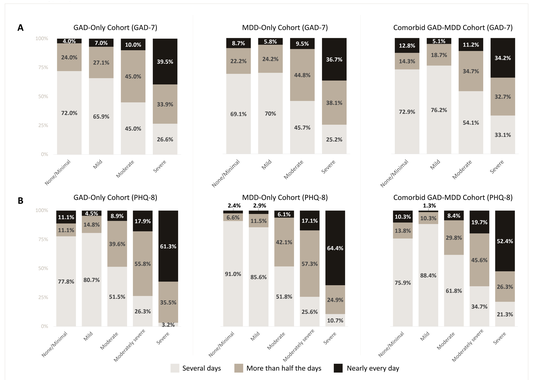


GAD: generalized anxiety disorder; GAD-7: 7-Item Generalized Anxiety Disorder Scale; MDD: major depressive disorder; PHQ-8: 8-Item Patient Health Questionnaire.

SI Frequency and Symptom Severity

- As symptom severity increased, the distribution of SI shifted from occasional SI ("several days") toward more frequent SI categories ("more than half the days" and "nearly every day") for both anxiety (**Figure 3A**) and depressive (**Figure 3B**) symptoms.
- The transition from moderate to severe symptom levels was associated with the sharpest increase in near-daily SI, rising 3- to 4-fold for anxiety and 6- to 11-fold for depression.

Figure 3 | SI Frequency by Anxiety (GAD-7) (**A**) and Depressive (PHQ-8) (**B**) Symptom Severity, by Cohort



GAD: generalized anxiety disorder; GAD-7: 7-Item Generalized Anxiety Disorder Scale; MDD: major depressive disorder; PHQ-8: 8-Item Patient Health Questionnaire.

Conclusions

- Undiagnosed cross-disorder symptom burden was common among patients with a GAD diagnosis only and those with an MDD diagnosis only.
- Both the prevalence and frequency of SI increased substantially with worsening anxiety and depressive symptom severity across all cohorts.
- Despite the elevated burden typically associated with comorbid GAD-MDD, any SI was generally less prevalent in the comorbid GAD-MDD cohort than single-diagnosis cohorts at moderate-to-severe symptom levels, potentially reflecting better disease state management among comorbid patients.
- Near-daily SI rose sharply with worsening symptom severity, increasing 3- to 4-fold for anxiety and 6- to 11-fold for depression from moderate to severe symptom levels, underscoring the critical need to effectively treat patients with severe symptoms.
- These findings suggest symptom severity may be a more important correlate of SI than diagnostic status alone and support comprehensive assessment of SI, anxiety, and depression regardless of diagnosis.

Strengths and Limitations

- This large, nationally representative US study adds to the limited existing knowledge of undiagnosed symptom burden among US adults with GAD or MDD alone, as well as describing the relationship between diagnostic status, GAD and MDD symptom severity, and SI.
- This study is cross-sectional and cannot provide evidence of causality for the associations between diagnostic status, GAD and MDD symptom severity, and SI.
- All data were self-reported, and diagnoses were not verified. Accordingly, some individuals may have been misclassified in the analysis, and it is also possible that the diagnosis numbers may be somewhat overinflated.

Disclosures

- The study was funded by Definium Therapeutics.

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medaffairs@definiumtx.com