Estimating the Contribution of Symptom Clusters to Risk of Suicidal Ideation or Behavior in Bipolar Disorder

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BACKGROUND

Bipolar disorder is typified by episodes of manic/hypomanic and depressive symptoms, which may occur either distinctly or concurrently as mixed symptoms. While depressive symptoms are the major driver of risk,[1,2,3] it has yet to be examined whether specific combinations of manic and anxiety symptoms contribute differentially to suicidal ideation and behavior in bipolar depression.

Aim: To investigate the contribution of different manic and anxiety symptom clusters, as well as severe depressive symptoms, to estimate the proportion of risk of suicidal ideation or behavior in bipolar depression due to different combinations of (hypo)manic and anxiety symptoms.

METHODS

Study sample: Data were obtained from the National Network of Depression Centers (NNDC) Mood Outcomes Program for 1028 visits from 626 individuals with bipolar disorder with depressive symptoms, operationalized as a Patient Health Questionnaire-8 (PHQ-8) score ≥10.

Exposure: ***Mood and Anxiety Symptoms***

Depressive symptoms were captured using the Patient Health Questionnaire-9 (PHQ-9)

Manic/hypomanic symptoms were captured using the five-item Altman Self-Rating Mania (ASRM) scale

Anxiety symptoms were captured using the Generalized Anxiety Disorder-7 (GAD-7).

Outcome: ***Suicidal ideation or behavior***

The primary outcome of suicidal ideation or behavior was reported on the Columbia-Suicide Severity Rating Scale (C-SSRS) coinciding with visit for mood ratings.

Statistical Analysis: This study uses a quantitative application of Rothman's theoretical framework of causation, or 'causal pies' model. To mitigate low cell counts, latent class analysis was employed for variable reduction to estimate proportion of disease to a class of a sufficient cause (PDC). A network analysis was also conducted to look at variables most strongly associated with 9th item of PHQ-9.

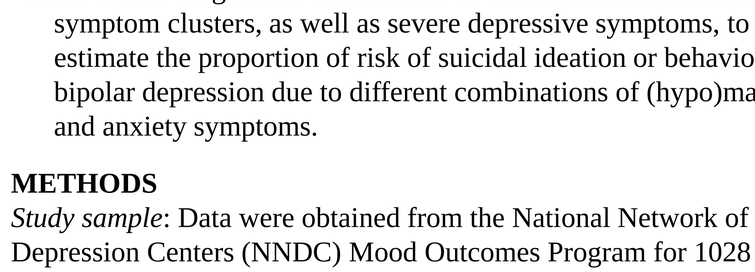


FIGURE 1. Classes of Sufficient Cause Illustrated Example

Potential combinations of hypothetical component causes A and B sufficient to produce an outcome, accounting for unknown/unmeasured factors (denoted as U).

RESULTS

We identified 7 latent classes of anxiety/manic symptoms and severe depressive symptoms as component causes. Only severe depressive symptoms (PHQ-8 ≥ 20) was identified as a significant risk factor, for which 4% of the risk of suicidal ideation or behavior can be attributed. In this illustration, the class of sufficient cause includes the component causes of 'severe depressive symptoms' and 'unknown/unmeasured factors', which are known only to not include the other risk factors captured in this study (i.e., the 5 items of the ASRM and 7 items of the GAD-7).

FIGURE 2. Classes of Sufficient Cause for Suicidal Ideation or Behavior

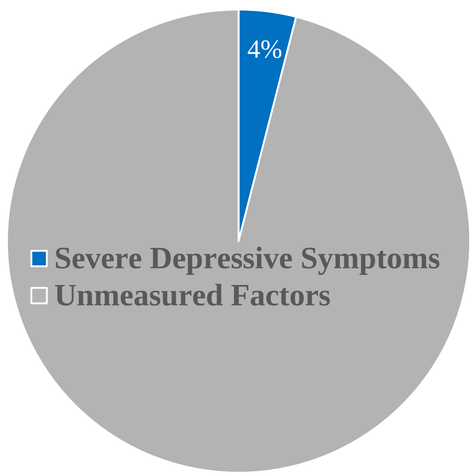
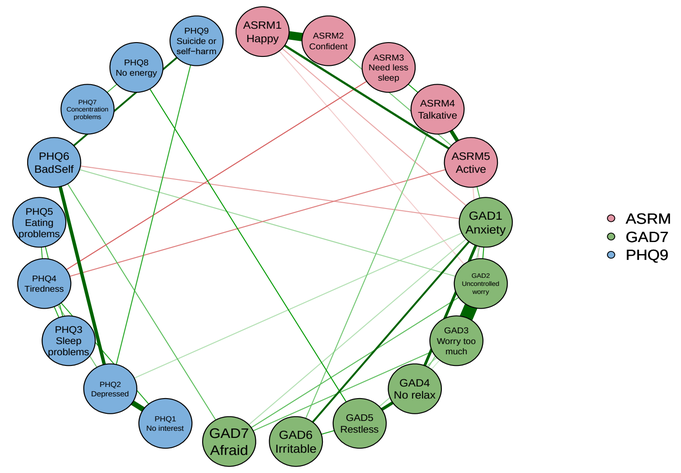


FIGURE 3. Network Analysis of GAD-7, PHQ-9, and ASRM Items.

The model doesn't identify any strong associations between individual items of the other scales and the 9th item of the PHQ-9.



DISCUSSION

This study did not identify any increased risk individually attributable to symptoms of mania and anxiety, using two commonly used self-reported rating scales, in individuals with bipolar disorder during depressive state. A small amount of risk was attributable to having severe depressive symptoms. These findings, however, may be influenced by limitations in sample size and measurement instruments. Future studies would benefit from larger samples and more rigorous assessments, including clinician-rated measures.

Strengths:

- Real world clinical data from NNDC
- Incorporation of specific symptom constellations

Limitations:

- Sample size may be inadequate to differentiate classes of sufficient causes
- Suicidal ideation as surrogate outcome

SUMMARY

Real world data from >1000 visits from NNDC Mood Outcomes Program

Exposure: Mood and anxiety symptoms

Outcome: Suicidal ideation and behavior

Results:

- We created latent clusters of anxiety and (hypo)manic symptoms
- No latent cluster appeared associated with increased risk of suicidal ideation/behavior at clinic visits
- Severe depressive symptoms were associated with increased risk although only explained a small attributable fraction

Takeaway Message:

The current analysis provides another layer of evidence of the limited impact on risk of suicidal ideation or behavior for manic symptoms in those already depressed and extends this finding to anxiety symptoms. This analysis also illustrates a potential role of the many risk factors that were not included in this analysis of such a complex and multidetermined outcome.

REFERENCES

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