

Influence of depression and anxiety on health-related quality of life while awaiting lung transplantation

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Introduction

Severe lung disease has significant effects on mental health. This can be exacerbated by the stress of awaiting lung transplantation.

The prevalence of depression and anxiety in lung transplantation candidates and the effects of these disorders on health-related quality of life have not been well described.

Purpose

Describe the rates of depression and anxiety amongst lung transplantation candidates and assess their associations with health-related quality of life.

Methods

Study

The Frailty and Sarcopenia in Organ Transplantation study (FROST) is a prospective single-center cohort study of 240 adults listed for solid organ transplantation. The current analysis is a cross-sectional study of subjects in the cohort listed for lung transplantation.

Population

Of 70 subjects on the lung transplant list, we evaluated the 65 with complete data.

Mental Health Measures

Prior to transplant, these patients completed:

- The Patient Health Questionnaire (PHQ-9), a 9 item questionnaire to establish severity of depression
- The Generalized Anxiety Disorder scale (GAD-7), a 7 item questionnaire to screen for anxiety

Outcome

Health-related quality of life, as measured by the 12-item short form health survey (SF12) with physical and mental component summary scores (PCS & MCS) assessed at the same time as the mental health measures.

Statistical Analysis

Using multiple linear regression adjusted for age, gender, and diagnosis, we identified whether depression or anxiety was associated with the SF12 MCS or PCS.

Results

| Variable | |
|---|--------------|
| Females (%) | 32 (49%) |
| Age, mean (SD) | 59.2 (13.6) |
| Body mass index, mean (SD) | 25 (4) |
| Six minute walk distance, mean (SD) | 366.9 (84.2) |
| Patient Health Questionnaire score, mean (SD) | 7.2 (4.5) |
| General anxiety disorder-7 score, mean (SD) | 4.3 (4.4) |
| 12 item short form survey score, mean (SD) | 80.7 (10) |
| - Mental component | 49 (9.7) |
| - Physical component | 31.7 (5.4) |

Figure 1. Population characteristics of transplanted patients.

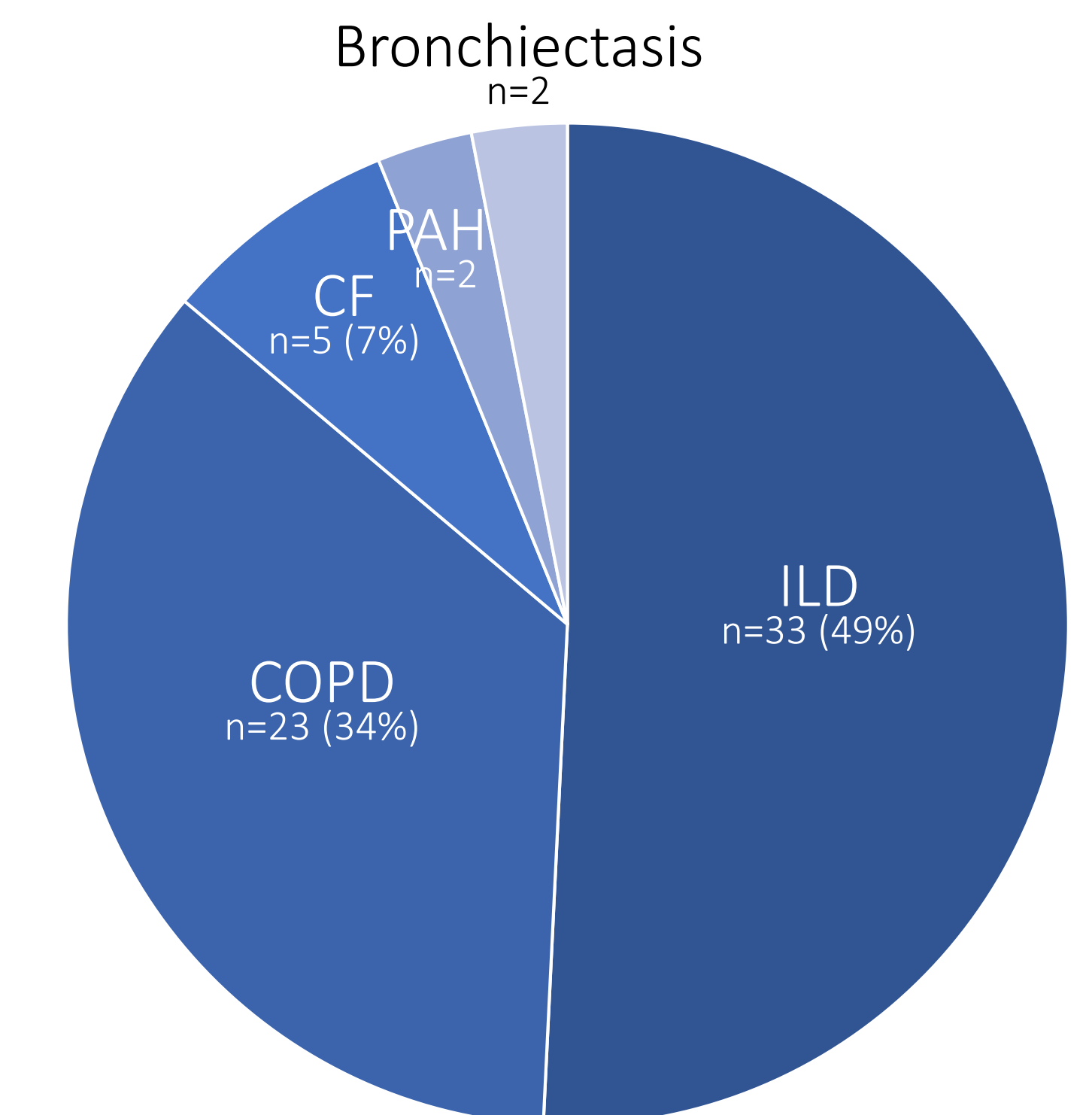


Figure 2. Lung diseases leading to transplantation.

Anxiety Rates by Severity

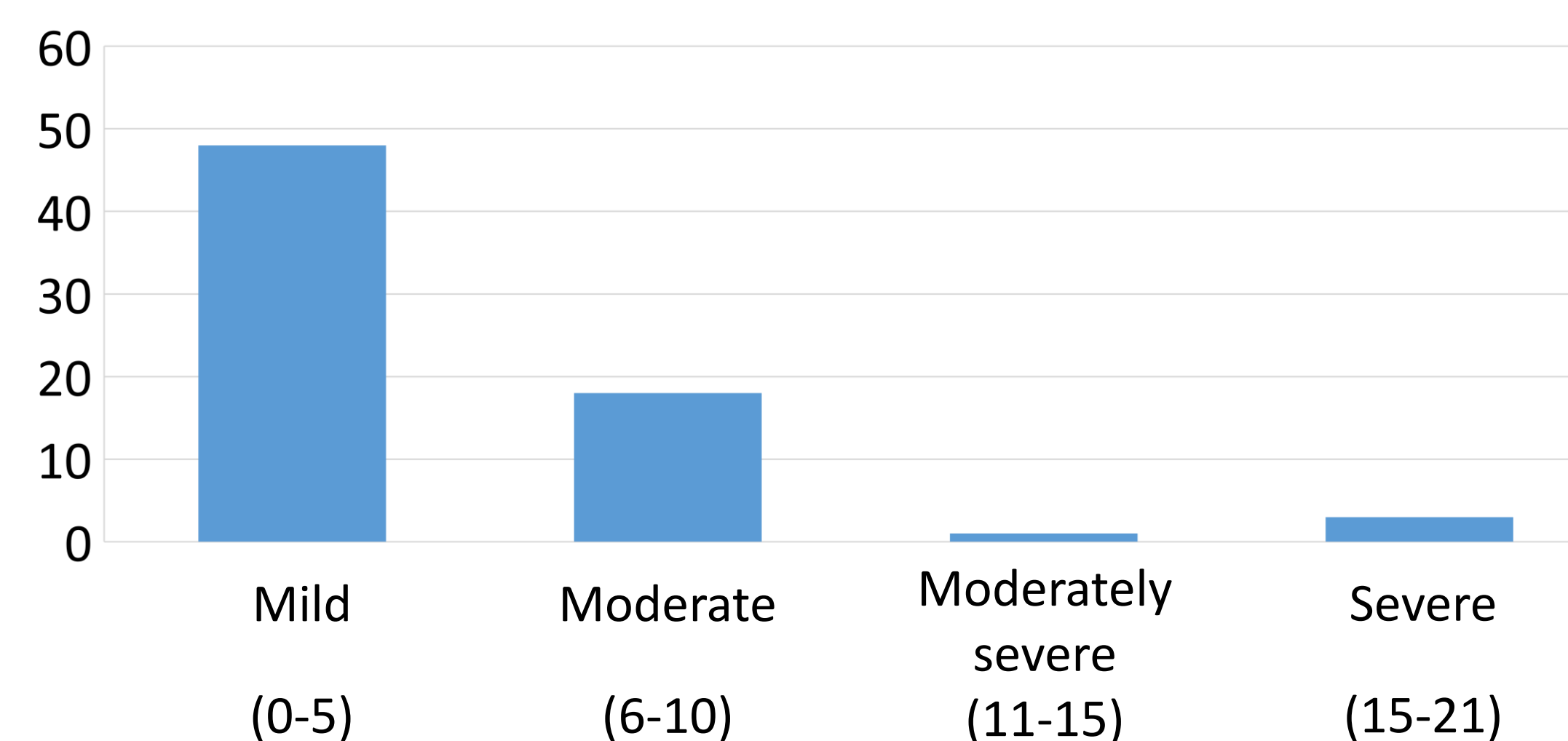


Figure 3. Number of patients with anxiety (GAD7).

Depression Rates by Severity

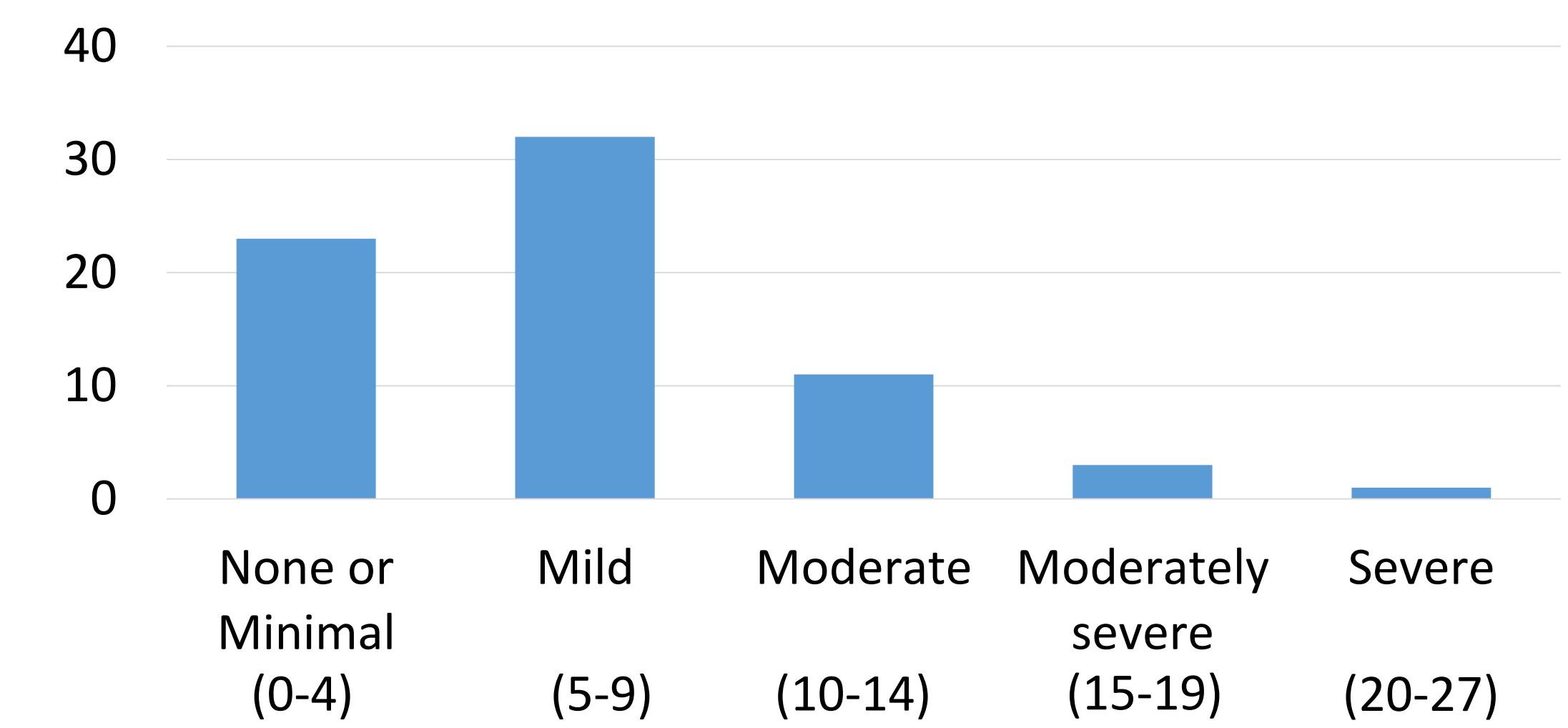


Figure 4. Number of patients with depression (PHQ9).

Multiple regression evaluating the effect of depression and anxiety on HRQL

| | β coefficient | 95% confidence interval | p-value |
|--------------------|---------------------|-------------------------|---------|
| Depression (PHQ-9) | -1.36 | -1.78, -0.94 | 0.0001 |
| Anxiety (GAD-9) | -1.34 | -1.78, -0.90 | 0.0001 |

*Model adjusted for age, gender, and lung diagnosis

Figure 5. Health-related quality of life as measured by the SF12 mental composite score (MCS) as a function of depression & anxiety.

Conclusions

Depression and anxiety were both associated with lower mental health-related quality of life.

Screening for and treating depression and anxiety may represent avenues for improving HRQL amongst transplant candidates.

References

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[2] Rozenberg D, Mathur S, Wickerson L, Chowdhury NA, Singer LG. Frailty and clinical benefits with lung transplantation. The Journal of Heart and Lung Transplantation 2018;37(10):1245-1253.