

Longitudinal SF-36 Physical And Mental Health Trajectories In Alpha-1 Antitrypsin Deficiency-associated Lung Disease



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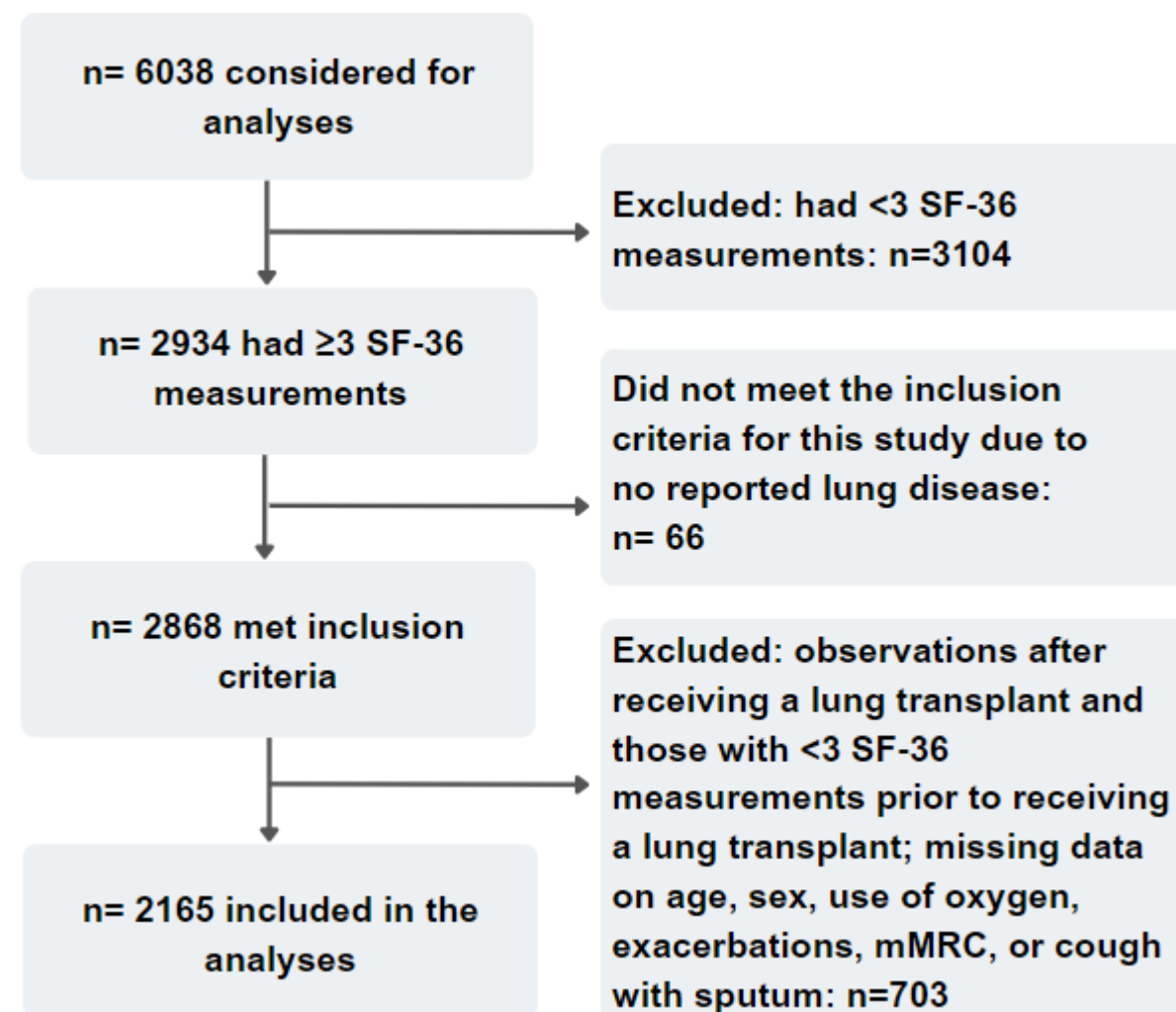
Background

- The Short Form 36-Item Health Survey (SF-36) is a generic measure of the health-related quality of life (HRQoL) validated for use in chronic obstructive pulmonary disease (COPD). Research shows that perception of physical health is more significantly impacted than mental health in people with COPD.
- There is a paucity of research on the impact of alpha-1 antitrypsin deficiency (AATD)-associated COPD on HRQoL and factors related to changes in health status over time in this population.

Methods

- This study included data collected via structured telephone interviews between 2008 and 2019 from 2,165 participants of AlphaNet, a not-for-profit health management organization for individuals with AATD in the United States who are prescribed augmentation therapy.
- Mixed effects models with random intercepts and slopes were used to evaluate the mean changes in SF-36 summary scores and subscales over time.

Figure 1. Study Flow Diagram



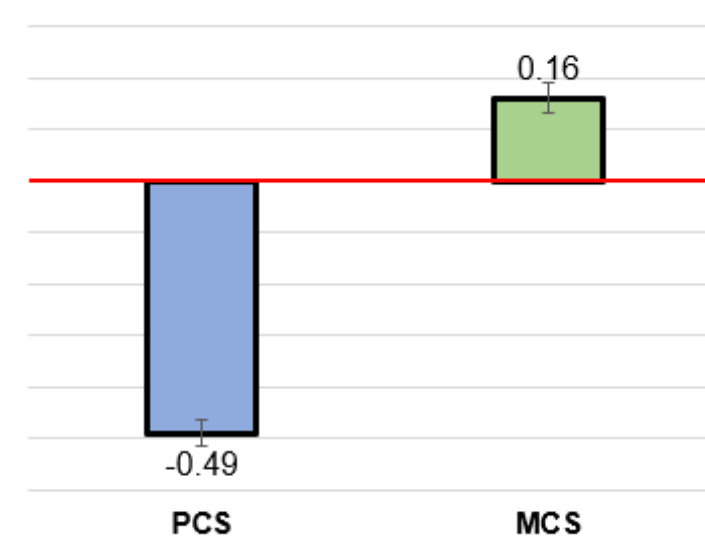
Results

Table 1. Baseline characteristics of the cohort, n=2165.

| | |
|--|-------------|
| Age, years, mean (SD) | 56.9 (10.0) |
| mMRC, mean (SD) | 2.3 (1.3) |
| Female, % | 47.0 |
| 2 or more exacerbations, % | 54.6 |
| mMRC, grades 3-4, % | 45.1 |
| Productive cough, % | 44.3 |
| Oxygen use, % | 46.5 |
| ZZ, ZNull, NullNull genotypes, % | 71.9 |
| SF-36 summary scores: | |
| MCS, mean (SD) | 51.9 (10.5) |
| PCS, mean (SD) | 37.5 (9.6) |
| SF-36 subscales: | |
| Physical functioning, mean (SD) | 42.6 (27.0) |
| Role physical, mean (SD) | 55.7 (30.1) |
| Bodily pain, mean (SD) | 71.0 (28.5) |
| General health, mean (SD) | 39.8 (22.6) |
| Vitality, mean (SD) | 49.7 (21.8) |
| Social functioning, mean (SD) | 73.5 (27.9) |
| Role emotional, mean (SD) | 79.4 (26.8) |
| Mental health, mean (SD) | 73.3 (20.2) |
| Number of SF-36 measurements, median (IQR) | 5 (3-8) |
| Number of follow-up years, median (IQR) | 7 (3-10) |

MCS and PCS- SF-36 physical and mental component summary scores, norm-based, with an average of 50 (SD=10) for the general US population; SF-36 subscale scores (range from 0-100, with higher scores indicating better health). Genotype data available in n=1794;

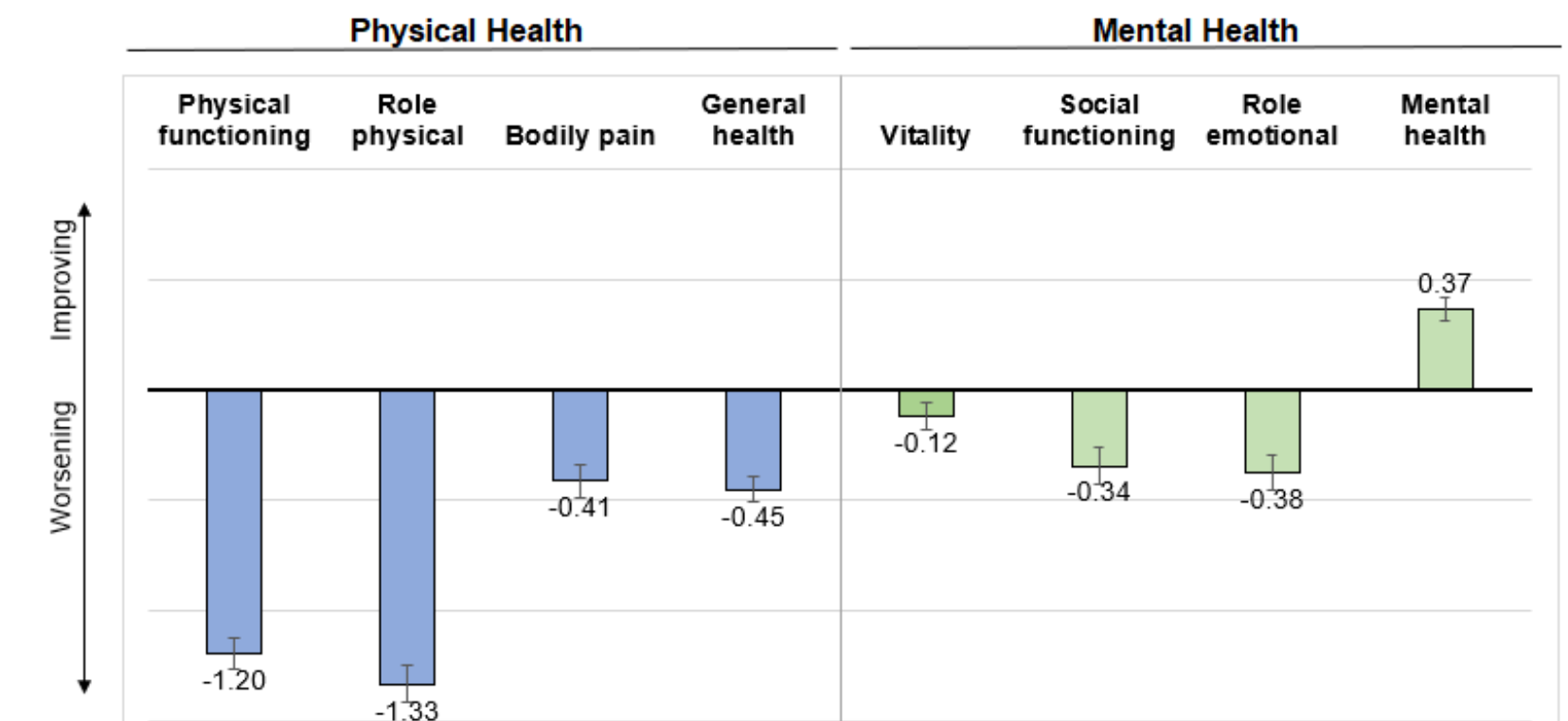
Figure 2. Annual change in SF-36 norm-based summary score means (higher scores indicate better health)



- PCS slopes indicated significant worsening with higher baseline mMRC grades (p=0.04) and higher frequency of exacerbations (p=0.01).
- MCS slopes indicated significant worsening with higher baseline exacerbation frequency (p=0.03) and use of oxygen (p=0.04)
- Younger at baseline individuals had greater improvement in MCS (p=0.001) and slower worsening in PCS (p=0.002) than older groups (Figure 4).

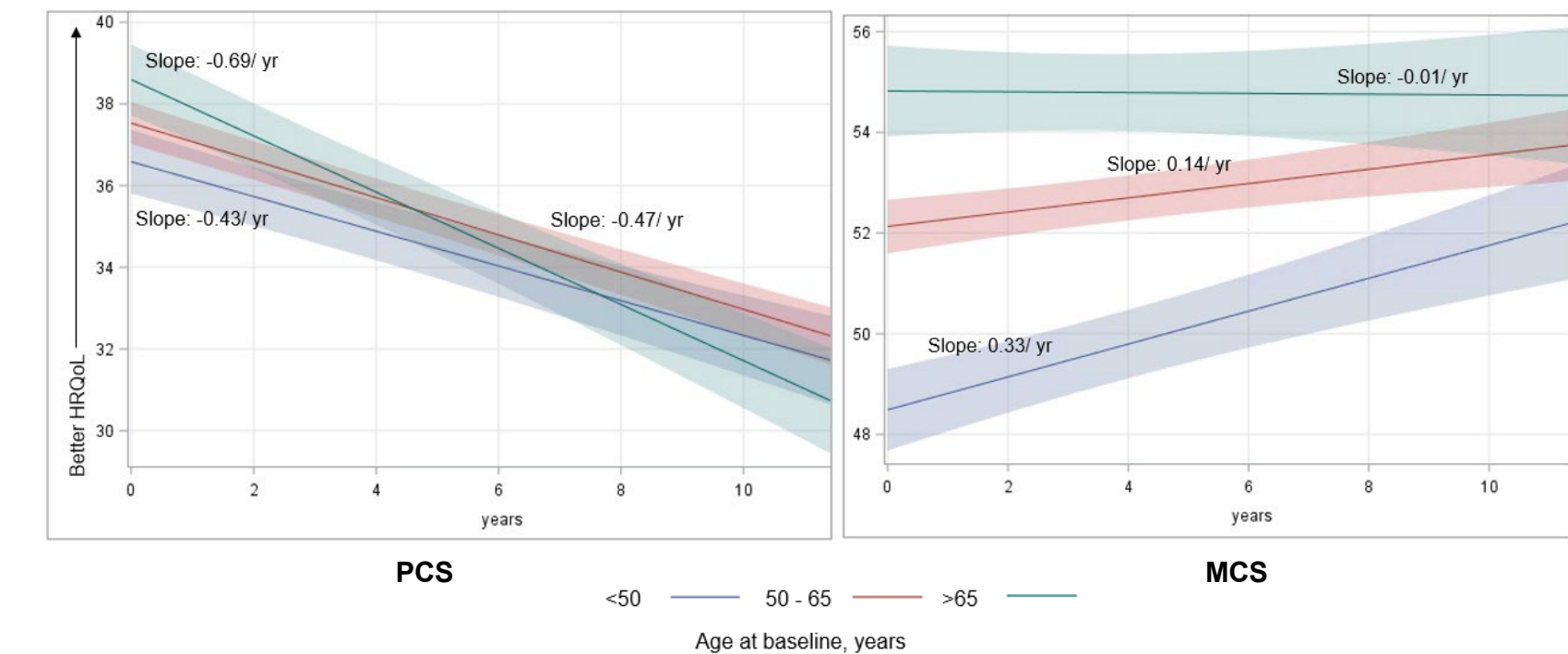
Results (continued)

Figure 3. Annual change in SF-36 subscale score means.



SF-36 subscale scores range from 0-100, with higher scores indicating better health.

Figure 4. Longitudinal trajectories of SF-36 summary scores (norm-based, mean=50 (SD=10) in the general US population) by age at baseline



Conclusions

- Mental and physical aspects of HRQoL measured by SF-36 remained relatively stable throughout the study period in this cohort of individuals with AATD-associated lung disease.
- Mental component scores were higher at baseline and over time, indicating better mental health compared to the physical component.

