EE297

Impact of Breathlessness Severity on Quality of Life, Healthcare Use, Productivity Loss and Economic Cost to the Australian Society

Anthony Sunjaya[1], Leanne Poulos[2], Gian Luca Di Tanna[1], Thomas Lung[1], Guy Marks[2], Helen Reddel[2], Christine Jenkins[1]

[1]The George Institute for Global Health, UNSW Sydney - Sydney (Australia). Correspondence: a.sunjaya@unsw.edu.au

[2]Australian Centre for Airways disease Monitoring (ACAM), the Woolcock Institute of Medical Research, The University of Sydney – Sydney (Australia)

Introduction

Breathlessness is a complex, highly prevalent symptom particularly associated with cardiac or respiratory disease, anxiety, inactivity, and lifestyle factors such as obesity

Previous studies have suggested that those with more severe breathlessness had lower quality of life and greater healthcare use

Our study aims to confirm these **impacts on quality of life, healthcare use, productivity and ascertain their economic cost** in a nationally representative survey of Australian adults conducted pre COVID-19

Methods

Analysis of the National Breathlessness Survey (NBS) conducted in 2019 (n=10,072 of which 4005 had mMRC≥1), a nationwide cross-sectional web-based survey recruiting Australians aged ≥18 years stratified by age-group, gender and state of residence.

Clinically relevant breathlessness ("breathlessness") is defined as mMRC dyspnoea scale (mMRC) ≥2

Outcomes of interest (only collected from those with mMRC ≥1):

(1) Quality of life (QoL) measured by EQ-VAS and EQ-5D-5L
(2) Productivity loss - missing days from work/school
(3) Healthcare use (HCU)-GP, specialist, ED visits & hospitalisations
(4) Economic cost

Analysis:

- Log link GLM with Gamma distribution to analyse QoL & cost, and logistic regression for HCU & productivity loss outcomes.
- Adjustments for age, gender, Indigenous background, self-reported heart & lung disease, high PHQ-4 score, multimorbidity and smoking.

Results and Discussion

Respondent Characteristics

Respondent Characteristics	Breathlessness (mMRC ≥ 2) prevalence 9.54%	Mean age 46.9±17.9 Female 51.1%	Self-reported Lung disease 16% Heart disease 10.4%	Multimorbidity 49.5% Current Smoker 22.5%

Impact on people with clinically relevant breathlessness (mMRC≥2), compared with those who are breathless only on hurrying on the level or walking up a slight hill (mMRC=1)

Quality of Life (QoL)

Median Difference between mMRC ≥ 2 vs mMRC 0

EQ-VAS (0-100)
13 to 17% lower
(Range -17.2 to -13.3)

EQ-5D-5L (0-1)
0.15 to 0.24 lower
(Range -0.240 to -0.155)

Annual QALYs Loss for 1000 respondents with breathlessness

130 to 170 QALYs

Lower reduction in QoL compared to prior South Australian study[1] reporting a difference in EQ-5D-5L index scores between mMRC 1 and 2, and mMRC 1 and 3/4 of 0.07 and 0.23 respectively

Healthcare Use

Adj. Odds of ≥1 visit over the past 12 months due to their breathing problem

Non-Urgent GP Visit
1.9x higher (1.6-2.3)

Urgent GP Visit
1.9x higher (1.6-2.3)

Specialist Visit
2.1x higher (1.7-2.5)

Hospital/ED Visit
2.1x higher (1.7-2.6)

Hospitalisation
1.23x (0.98-1.56)
Not statistically significant

Our results align but found lower odds of HCU compared with results of the 2017 South Australian Omnibus survey[2]

$ Economic Cost

At the national level

Healthcare System

AUD 11.5 billion

Societal Cost

AUD 12.7 billion

At the individual level

Median difference in cost of productivity loss for those working

AUD 367 per year

Prior Australian study[3] found 4% vs 2% of mMRC≥2 vs mMRC=1 had needed to forgo work due to breathlessness

Conclusion

A **substantial proportion** of the community have clinically relevant breathlessness resulting in **detrimental impacts on quality of life and productivity, increased healthcare use and significant economic cost to society**.

Raising awareness for people with breathlessness to seek care, training providers and equipping the health system to manage them should be a priority.

Further research should include

- assessing the short and long term impact of breathlessness on these outcomes
- using linked data to more robustly evaluate impacts on healthcare use and productivity
- evaluating the impact of COVID-19, including long-COVID-19, on these results.

Acknowledgements

The NBS was funded by independent research grants from AstraZeneca, GlaxoSmithKline, & Novartis. AS is supported by a Scientia PhD scholarship from UNSW.

References

[1]Currow et al (2020). J Pain Symp. Manag. Vol. 60(4)
[2]Currow et al (2021). ERJ Open Resp. Vol. 7
[3]Kochovska et al (2020). Pall. Med Reports. Vol. 1(1)

Receive updates when the full study is published by scanning this QR Code

Summary

About 9% of respondents had clinically relevant breathlessness. Breathlessness carries a significant burden for patients, the healthcare system, and the economy.

People with clinically relevant breathlessness (mMRC ≥ 2), compared with those with minor breathlessness (mMRC = 1), had lower quality of life, about 2x the odds of healthcare use and missing days from school/work due to breathing problems in the past 12 months.