Qualitative literature review exploring the patient experience of shortness of breath in COPD and Asthma

Sharan Randhawa[1], Lucia De Prado Gomez[2], Heer Shah[1], Holly Harris[1], Asha Lehane[1], Rebecca Williams-Hall[1], Jane R Wells[3]

[1]Patient-Centered Outcomes, Adelphi Values, Bollington, UK; [2]Sanofi, Cambridge, USA; [3]Sanofi, Reading, UK

Poster No. CO196

OBJECTIVE

To conduct a targeted literature review (TLR) and develop a conceptual model illustrating the relationships between shortness of breath and health-related quality of life (HRQoL) domains in patients with chronic obstructive pulmonary disease (COPD) and asthma.

BACKGROUND

- Shortness of breath is a key distressing symptom of COPD and asthma.[1]
- Understanding the patient experience of shortness of breath in these populations is essential for informing the development of clinically relevant trial endpoints and evaluating treatment benefits.[2]

METHODS

Identification of publications

- TLR was conducted in June 2024
- Publications were identified through OVID (Medline®, Embase®, PsycINFO®), Google Scholar, conference proceedings, and key reference lists of identified publications

Screening of publications

- Abstracts were screened, and qualitative studies (published since 2016 in English) describing the patient experience or perspectives on shortness of breath and its relationship with HRQoL in adults (≥18 years) with asthma or COPD were included

Data extraction

- Relevant data and patient quotes on shortness of breath in asthma and COPD were extracted from full-text articles into a Microsoft Excel Data Extraction form and summarized

Conceptual model

- Findings were summarized in a conceptual model illustrating the patient experience of shortness of breath and associated HRQoL impacts in asthma and COPD, and the directionality of these relationships

COPD, chronic obstructive pulmonary disease; HRQoL, health-related quality of life; TLR, targeted literature review

RESULTS

Study characteristics

- In total, 17 full-text articles were selected. Most publications included COPD populations (13/17; 76%), three included asthma populations (3/17; 18%), and one included both COPD and asthma populations (1/17; 6%).
- Within the identified publications, COPD severity ranged from mild to very severe, while asthma severity ranged from mild to severe.

HRQoL impacts associated with shortness of breath

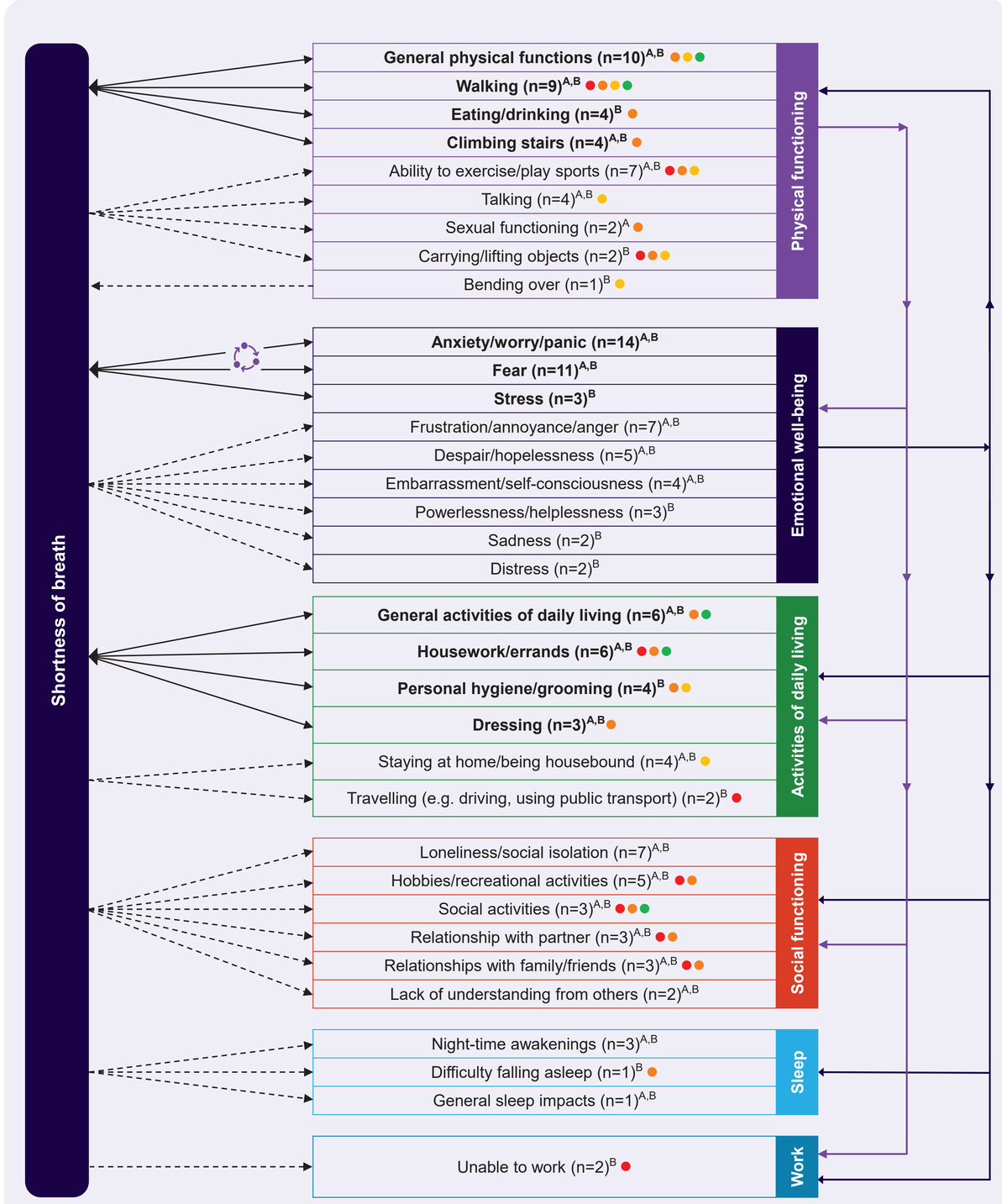
- Shortness of breath was associated with six HRQoL domains: physical functioning (e.g., walking), emotional well-being (e.g., anxiety/worry/panic, fear), activities of daily living (ADL) (e.g., housework), social functioning (e.g., loneliness, reduced participation in social activities), sleep (e.g., night-time awakenings), and ability to work (**Figure 1**).

Figure 1. Patient quotes for most frequently reported impacts

	COPD	Asthma
Physical functioning	"*I am **vexed** because **I am not able to control my breathing troubles when I am physically active.** I have acquired a **sustained limitation in my life. I feel like an old locomotive.**"*[3]	"*It means – basically it's a pain in the arse. It means I'm **restricted in certain physical activity** obviously and [plays a big] part [of] your life. It – you're sick quite often. **Hard to breathe**. It's a **bit of a cross to bear.**"*[4]
Emotional well-being	"***I get so breathless it becomes a panic attack.** Because you just **can't control it** anymore.*"[5]	"***Suffocation. Can't breathe. Dying.** No other way to put it … **Trying to control my breathing, panicking at the same time because I can't breathe**, and [thinking] am I going to see the night through?*"[6]
Activities of daily living	"*I am **quite alright if I sit and do nothing** but **once I get up and try to do anything (I get bad).***"[7]	"***Doing anything was a struggle**. Even sitting down was a struggle. I **just could not breathe** at all and just **relying too much on my inhalers**. I **can't do anything**. I'd **no quality of life**, I didn't*"[4]
Social functioning	"*You **cannot do anything**…I would **like to buy a house, this is impossible**. With this disease, **you can't live your life anymore.***"[8]	"***I feel that shortness of breath as a result of the exertion**…it's frustration that leads to annoyance and I **just get annoyed with myself**. And to a certain extent I **become a little anti-social I suppose**. I **don't want to talk to anybody or hear anything.***"[6]
Sleep	*"**I wake up at night, because I am running out of air.***"[9]	"*The breathlessness for me. **I get breathless at night so it wakes me at night.***"[4]
Work	""*The recognition of having to **finish paid work** was described as difficult, with many participants having had physically demanding jobs, such as nursing, kitchen-work, farming, printing or engineering.*"[10]	Not reported

- The association between shortness of breath and HRQoL impacts was primarily unidirectional, whereby shortness of breath impacted HRQoL concepts (e.g., the ability to conduct activities/functions or leading to the onset of specific emotions).
- A bidirectional association was identified for some physical functioning concepts (general physical functions, walking, climbing stairs, eating/drinking) and ADL (general activities of daily living, housework/errands, personal hygiene/grooming, dressing): these activities were both impacted by and could trigger or worsen shortness of breath. A similar bidirectional relationship was found between shortness of breath and stress.
- A cyclical relationship was identified between shortness of breath and anxiety/worry/panic and fear. Thinking about or experiencing breathlessness triggered feelings of anxiety and/or fear, which in turn led to new breathlessness episodes, reinforcing the cycle of anxiety and/or fear.
- The experience of shortness of breath amongst patients with COPD and asthma was found to be comparable, supporting the development of a single, unified conceptual model.

Figure 2. Conceptual model



CONCLUSIONS

- **The qualitative literature review demonstrates that shortness of breath has a major impact on nearly all aspects of life, especially physical and emotional well-being. These impacts often trigger and exacerbate shortness of breath. The findings also show that these impacts are interconnected, making the effect on HRQoL complex and multifaceted.**
- **These findings can be used to inform the development of clinical trial endpoints and the design of measurement tools that capture outcomes meaningful to patients and reflect their real-world experiences.**

REFERENCES

1. Yayan et al. Adv Exp Med Biol. 2016; 910: 31–38; **2.** Svedsater et al. Adv Ther. 2017; 34: 1466–1481; **3.** Simony et al. Int J Qual Stud Health Well-being. 2019; 14: 1647401; **4.** Majellano et al. ERJ Open Res. 2024; 10: 00864–2023; **5.** Mooren et al. BMC Pulm Med. 2022; 22: 456; **6.** Foster et al. Eur Respir J. 2017; 50: 1700765; **7.** Jarab et al. Int J Clin Pharm. 2018; 40: 573–579; **8.** Serresse et al. Palliat Med. 2022; 36: 1364–1373; **9.** Linde et al. Support Care Cancer. 2018; 26: 1097–1104; **10.** Tumilty et al. J Prim Health Care. 2020; 12: 166–172

ACKNOWLEDGEMENT AND FUNDING

Medical writing support was provided by Sunita Rana and Vibha Pathak from Sanofi. The study was funded by Sanofi.

CONFLICTS OF INTEREST

JRW and LDG are employees of Sanofi and may hold stocks in the company. SR, RWH, HS, HH, and AL are employees of Adelphi Values, the consultancy that received funding from Sanofi to conduct the research.

Poster presented at ISPOR-EU 2025, 9-12 November, Glasgow, Scotland, UK

Contact information
Jane R Wells | Jane.Wells@sanofi.com