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Long term conditions

The Nomenclature and Assessment of Breathing Pattern Disorder (BrPD): An Association of Chartered Physiotherapists in Respiratory Care (ACPRC) Position Statement

Izzie Easton[1], Fiona Schreuder[2], Lizzie Grillo[3,4], Agnieszka Lewko[5]

[1] School of Sport, Rehabilitation and Exercise Sciences, University of Essex, [2] Pulmonary Rehabilitation, Swansea Bay University Health Board, [3] National Heart and Lung Institute, Imperial College London, [4] Royal Brompton Hospital, Guy's and St Thomas' NHS Foundation Trust, [5] Research Centre for Healthcare and Communities, Coventry University

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INTRODUCTION

This statement recognises the importance of assessing breathlessness when standard medical assessments incompletely explain symptoms and where often no pathophysiological cause of breathlessness can be attributed despite individuals experiencing unpleasant symptoms. It also acknowledges the vital role of physiotherapists in assessing and managing these patients. It aims to provide clear consensus on terminology and assessment, to support decision-making in various clinical settings, and to inform research and improve diagnosis. This consensus has significant clinical, policy, and research implications.

BACKGROUND

Breathlessness is caused when there is a loss of functional reserve, where alveolar ventilation is impaired, and/or gas exchange is compromised.[1] This complex symptom is known to be influenced by other functions, including emotion, hormones, musculoskeletal influences, and exertion.[2] When breathlessness remains unexplained by pathophysiology, it is often described by terms including dysfunctional breathing, unexplained breathlessness, functional breathlessness, hyperventilation and breathing pattern disorder (BrPD).[3,4] This type of breathing is typified by multi-dimensional characteristics that cause breathing to deviate from allostasis (respiratory requirements).[5-7] Such factors include a complex interplay of neural, biomechanical and biochemical cardiorespiratory mechanisms alongside psychological factors[5,6] and it can occur with and without pathological processes (Figure 1). Physiotherapists play an important role in non-pharmacological breathlessness and breathing pattern management.[8-10] Therefore, it is key to establish a unified terminology and consensus for the assessment of this clinical condition.

PREVALENCE AND MORBIDITY

The overall prevalence of BrPD in the general population is likely underestimated at 9.5%, increasing to over 30% for those with asthma and COPD.[7,11] Recently, there has been an increase in patients presenting with breathlessness in varied clinical settings, including long COVID,[12] back pain,[13] upper airway conditions,[7] as well as more traditional 'respiratory physiotherapy' services. It is a complex and burdensome condition; patients report worse physical functioning scores, are more anxious, with a poorer health-related quality of life.[14,15] Furthermore, this condition frequently exaggerates symptoms of respiratory conditions, increasing the likelihood of excess prescriptions and the misuse of the prescribing budget.[16]

Guidance is needed to support physiotherapists in various settings. Understanding the prevalence of this condition is hampered by the variety of ways it is recognised. In clinical practice, this is usually following an extensive physiotherapy assessment.[4,13] In research, the Nijmegen Questionnaire (NQ) is often utilised to record prevalence.[17] The NQ is a self-completed questionnaire of 16 items, initially developed to assess hyperventilation[18] and more recently suggested for 'functional respiratory symptoms'.[17] The true prevalence could be underestimated as the NQ may not capture all types of BrPD[19] and should not be used in isolation to assess for BrPD as scores may be increased in other presentations, due to pathophysiological and psychopathological processes. Consistent terminology and methods of assessment may help to improve recognition of these patients.[4]

TERMINOLOGY

There is significant variation in the terminology used by both clinicians and researchers to describe this issue. In 2023, physiotherapists working with people living with this condition felt that agreement on nomenclature was urgently needed and the interchangeable use of terms diminished the importance of the condition, delaying accurate diagnosis and treatment, and obstructing clinical and research progress.[4]

Recently, an expert panel of physiotherapists based in the United Kingdom (UK) reached a consensus on terminology through the use of the nominal group technique.[20] To achieve this agreement, focus groups were conducted

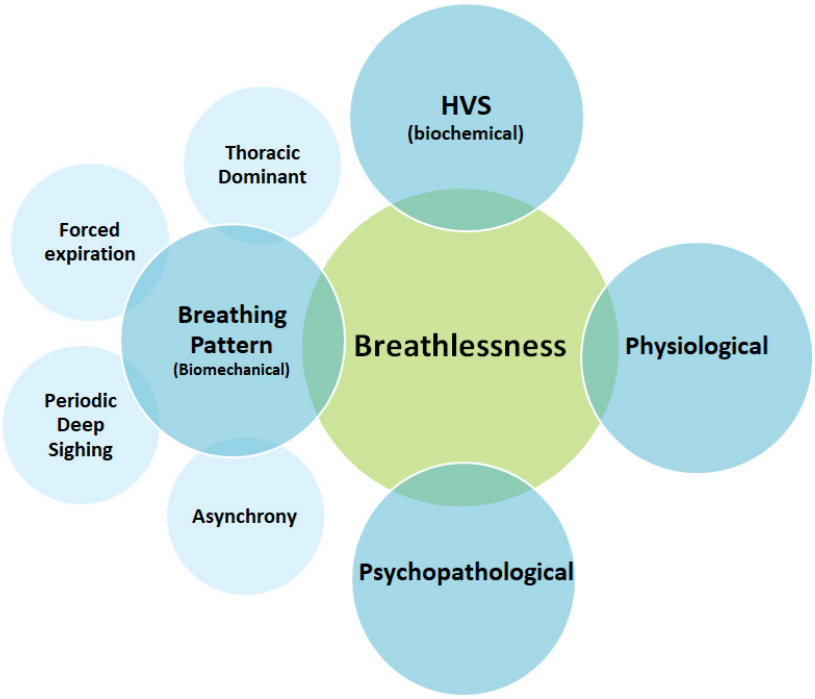

Figure 1. Factors influencing the presentation of BrPD adapted from[5,6]. HVS: Hyperventilation syndrome.

with physiotherapists, non-physiotherapy clinicians (doctors, nurses, and speech and language therapists), and, for the first time, patients. This approach aimed to gather a broad range of opinions on the terminology being used. Focus group findings were shared with the nominal group before consensus was concluded. Overall, 71% of the group agreed with the term breathing pattern disorder (BrPD). Discussions emphasised that both patients and clinicians dislike the term "dysfunction" because of the challenge it creates by separating the problem from the person when labelling this condition and an implication of blame, and how this subsequently impacts patients and their understanding and acceptance of such a label.

BrPD is not yet classified as a diagnosis within the UK Systematised Nomenclature of MEDicine clinical terms (SNOMED) and does not have a Health Resource Group (HRG) code to account for the growing number of physiotherapy interventions. HRG codes are used to group patient activities for payment purposes based on procedure and diagnosis codes. Terms available within the SNOMED system are 'ineffective breathing pattern', 'abnormal breathing patterns' and 'breathing pattern impairment'. The observation events, i.e., how many times this code is used are extremely low (fewer than 100 observations in total use). This lack of coding events may suggest insufficient recognition and missed opportunities for clinical care hindering the ability to understand the prevalence, outcome, and determinants of BrPD.

ASSESSMENT

Although various assessment tools and outcome measures exist for BrPD, they often address some aspects of how these patients present but may not cover all variations of the condition and additionally have inconsistencies in their measurement properties.[21,22] Inconsistency in the evidence of assessment and recognition may result in delayed diagnosis and access to services, and unnecessary investigations and healthcare resources.

A survey of 103 physiotherapists outlined the investigations that individuals commonly complete during a physiotherapy assessment, however, results will have been influenced by factors including level of experience, competency, and confidence of the physiotherapist completing the survey.[4] More recently, a consensus among experienced physiotherapists has developed a comprehensive assessment guide to support practitioners.[20] The development of assessment tools and outcome measures has been described as essential to developing higher-quality research and accurate diagnosis.[23]

POSITION STATEMENTS

The Association of Chartered Physiotherapists in Respiratory Care (ACPRC), therefore, supports the adoption of the term 'Breathing Pattern Disorder' to provide a consistent term for this condition. The acronym 'BrPD' was chosen to differentiate it from others including bipolar disorder and bronchial pulmonary dysplasia. Additionally, the ACPRC supports the use of the developed assessment guide to underpin the education and clinical delivery of a repeatable and effective assessment of BrPD (see supplementary material). Finally, it advocates that breathlessness services should consider including BrPD evaluation within their clinical pathway to optimise the delivery of breathlessness services where these patients may be referred.

DISCUSSION

CLINICAL IMPLICATIONS

The assessment guide will enhance clinical care by ensuring patients with BrPD receive structured, consistent specialist physiotherapy management, thereby promoting equality and inclusivity. The guide may be utilised for education and training at pre- and post-registration levels, as well as competency assessment and should be subject to review and validation in the future. It is important to emphasise that any guide should support, not replace, physiotherapists' decision-making and clinical reasoning.

POLICY

Consistency with nomenclature will enhance recognition of this condition. The future development of new SNOMED/HRG codes will build on this. Inequalities in care delivery, policy development, and workforce planning could be addressed with a uniform approach which can be built from the consistency described in this statement.

RESEARCH

Research designs should consistently use standardised terms and well-described assessments to ensure that BrPD research populations are representative. Furthermore, developing reliable assessment and outcome measures is crucial in research into effective BrPD management. Enhancing recognition of the condition has the potential for developing fellowships and funding for further research. Additionally, epidemiological interrogation of data may be possible in the future with the uptake of consistent coding.

FUTURE RECOMMENDATIONS

The ACPRC believes this position statement provides a platform to improve the quality of patient care. A definitive name and assessment method ensures consistency in clinical practice and research. It provides information to education providers to help them develop resources responsive to advancements in understanding breathlessness and in line with clinical skill expectations. The APCRC has created this position statement to encourage physiotherapists to promote consistent terminology and assessment practices and to share this information widely within their multidisciplinary communities.

Key points

1. Standardised Terminology

The ACPRC endorses 'Breathing Pattern Disorder' (BrPD) as the preferred term, replacing varied and inconsistent terminology to improve recognition, diagnosis, and research.

2. Comprehensive Assessment

A standardised assessment guide has been developed to support physiotherapists in their autonomous decision-making and clinical reasoning when diagnosing BrPD, ensuring consistent and effective evaluation across clinical settings.

3. Clinical and Policy Implications

The ACPRC advocates for integrating BrPD assessment into breathlessness services and promoting its recognition within healthcare coding systems (e.g., SNOMED and HRG codes) to support service planning and funding.

4. Future Research and Education

Calls for further research into BrPD mechanisms, treatment effectiveness, and outcome measures, while encouraging education and training at all levels to enhance physiotherapist expertise in managing the condition.

DECLARATION OF INTEREST

None to declare.

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REFERENCES

1. Parshall MB, Schwartzstein RM, Adams L, et al. An official American Thoracic Society statement: update on the mechanisms, assessment, and management of dyspnea. *Am J Respir Crit Care Med*. 2012;185(4):435-452. doi:10.1164/rccm.201111-2042ST

2. Marlow LL, Faull OK, Finnegan SL, Pattinson KTS. Breathlessness and the brain: the role of expectation. *Curr Opin Support Palliat Care*. 2019;13(3):200-210. doi:10.1097/spc.0000000000000441

3. Adam G. Dysfunctional breathing after COVID-19: recognition and ramifications. *European Respiratory Journal*. 2024;63(4):2400149. doi:10.1183/13993003.00149-2024

4. Grillo L, Russell AM, Shannon H, Lewis A. Physiotherapy assessment of breathing pattern disorder: a qualitative evaluation. *BMJ Open Respir Res*. 2023;10(1). doi:10.1136/bmjresp-2022-001395

5. Courtney R, Greenwood KM, Cohen M. Relationships between measures of dysfunctional breathing in a population with concerns about their breathing. *J Bodyw Mov Ther*. 2011;15(1):24-34. doi:10.1016/j.jbmt.2010.06.004

6. Boulding R, Stacey R, Niven R, Fowler SJ. Dysfunctional breathing: a review of the literature and proposal for classification. *Eur Respir Rev*. 2016;25(141):287-294. doi:10.1183/16000617.0088-2015

7. Harrison JL, Slinger R, Wilson H, Slinger C. The prevalence of upper thoracic breathing pattern in patients with breathing pattern disorder and inducible laryngeal obstruction. *Thorax*. 2019;74(Supplement 2):A204-A205. doi:10.1136/thorax-2019-BTSabstracts2019.357

8. Bruton A, Lee A, Yardley L, et al. Physiotherapy breathing retraining for asthma: a randomised controlled trial. *Lancet Respir Med*. 2018;6(1):19-28. doi:10.1016/s2213-2600(17)30474-5

9. Barker NJ, Elphick H, Everard ML. The impact of a dedicated physiotherapist clinic for children with dysfunctional breathing. *ERJ Open Res*. 2016;2(3). doi:10.1183/23120541.00103-2015

10. Thomas M, Bruton A, Little P, et al. A randomised controlled study of the effectiveness of breathing retraining exercises taught by a physiotherapist either by instructional DVD or in face-to-face sessions in the management of asthma in adults. *Health Technol Assess*. 2017;21(53):1-161. doi:10.3310/hta21530. PMID:28944752

11. Thomas M, McKinley RK, Freeman E, Foy C, Price D. The prevalence of dysfunctional breathing in adults in the community with and without asthma. *Primary Care Respiratory Journal*. 2005;14(2):78-82. doi:10.1016/j.pcrj.2004.10.007. PMID:16701702

12. Heightman M, Prashar J, Hillman TE, et al. Post-COVID-19 assessment in a specialist clinical service: a 12-month, single-centre, prospective study in 1325 individuals. *BMJ Open Respir Res*. 2021;8(1). doi:10.1136/bmjresp-2021-001041

13. Vermeersch A, Janssens L, Thys T, et al. Preliminary study on the importance of the detection of respiratory problems in patients with low back pain. *Tijdschrift voor Geneeskunde*. 2017;73(9):529-540.

14. Denton E, Bondarenko J, Tay T, et al. Factors Associated with Dysfunctional Breathing in Patients with Difficult to Treat Asthma. *Journal of Allergy and Clinical Immunology: In Practice*. 2019;7(5):1471-1476.

15. Denton E, Bondarenko J, O'Hehir RE, Hew M. Breathing pattern disorder in difficult asthma: Characteristics and improvement in asthma control and quality of life after breathing re-training. *Allergy*. 2019;74(1):201-203. doi:10.1111/all.13611

16. Morgan MD. Dysfunctional breathing in asthma: is it common, identifiable and correctable? *Thorax*. 2002;57 Suppl 2(Suppl 2):Ii31-ii5.

17. van Dixhoorn J, Folgering H. The Nijmegen Questionnaire and dysfunctional breathing. *ERJ Open Res*. 2015;1(1). doi:10.1183/23120541.00001-2015

18. Vansteenkiste J, Rochette F, Demedts M. Diagnostic tests of hyperventilation syndrome. *Eur Respir J*. 1991;4(4):393-399. doi:10.1183/09031936.93.04040393

19. Ionescu MF, Mani-Babu S, Degani-Costa LH, et al. Cardiopulmonary Exercise Testing in the Assessment of Dysfunctional Breathing. *Front Physiol*. 2020;11. doi:10.3389/fphys.2020.620955. PMID:33584339

20. Grillo LJ, Easton I, Schreuder FM, et al. Physiotherapy assessment of breathlessness and disordered patterns of breathing: Defining a consensus on terminology and assessment. *Chron Respir Dis*. 2025;22:14799731251315483. doi:10.1177/14799731251315483

21. Mohan V, Rathinam C, Yates D, Paungmali A, Boos C. Validity and reliability of outcome measures to assess dysfunctional breathing: a systematic review. *BMJ Open Respir Res*. 2024;11(1). doi:10.1136/bmjresp-2023-001884

22. Ogilvie VL, Kersten P. A critical review of the psychometric properties of the Nijmegen Questionnaire for hyperventilation syndrome. *New Zealand Journal of Physiotherapy*. 2015;43(1):03-10. doi:10.15619/NZJP/43.1.01

23. Jones M, Harvey A, Marston L, O'Connell NE. Breathing exercises for dysfunctional breathing/hyperventilation syndrome in adults. *Cochrane Database Syst Rev*. 2013;2013(5). doi:10.1002/14651858.CD009041.pub2. PMID:23728685