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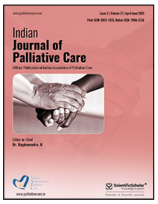
Indian Journal of Palliative Care

Article in Press



Original Article

An Audit Cycle to Evaluate the Improvement in Documentation of Breathlessness and Non-Pharmacological Interventions in Palliative Care Services

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ABSTRACT

Objectives: To study the documentation of breathlessness and the Non-Pharmacological Interventions (NPIs) before and after implementation of the Standard Operating Procedure (SOP). The set standard was 100% for both. The secondary aim is to study the symptom cluster.

Materials and Methods: Breathlessness is a distressing symptom in patients with cancer. Management principles are based on the empirical Breathing-Thinking-Functioning model with NPI as the first line of treatment. Multidisciplinary Team (MDT) interventions are crucial for lifestyle adjustments to preserve functionality, alleviate anxiety, and train in breathing techniques. The MDT was inducted in the Department of Palliative Medicine in 2022. To assess the impact of MDT on documentation of breathlessness and NPIs, case records of adult patients with cancer, in March 2021 and March 2022 were audited. Statistical analysis was done using Epi Info. Along with documenting the severity of breathlessness, an SOP for NPI in mild, moderate, and severe breathlessness was implemented in December 2022 and the department staff were trained and sensitized. The data was collected for adult patients diagnosed with cancer over two periods; a month after the introduction of SOP for 2 consecutive months (February and March 2023) and after 8 months (September 2023). Data over the cycle was studied and analyzed using Epi Info software (version 7.2.6).

Results: In 2021, (n = 391), 68% had documented breathlessness, with no documentation of NPIs. In 2022, (n = 433), breathlessness documentation increased to 80%, and NPIs to 16%. In February and March 2023, 93.4% of cases had documented breathlessness, with NPIs documented in 91.4%. In September 2023, breathlessness documentation reached 96.7%, with NPIs at 93.5%. Common symptom clusters were fatigue and anxiety.

Conclusion: There was a significant improvement in the documentation of breathlessness and NPIs following MDT induction and SOP implementation. Symptom clusters such as fatigue and anxiety were commonly associated with breathlessness, highlighting the need for integrated multidisciplinary approaches in palliative care settings.

Keywords: Breathing, functioning and thinking model, Breathlessness, Edmonton symptom assessment system, Non-pharmacological

INTRODUCTION

Breathlessness, or dyspnoea, is a prevalent and distressing symptom in palliative care, significantly impacting patients' quality of life.[1] Despite its importance, documentation and management of breathlessness are often inconsistent. In advanced cancer patients, about 30% reported dyspnoea, with 70% experiencing episodic breathlessness due to exertion. This is influenced by multiple factors, including physiological, psychological, social and environmental elements.[2]

In a longitudinal, observational and multicentre study from India, the prevalence of breathlessness in patients with advanced cancer presenting to outpatient clinics was found to be 36.4%, with 28.5% having moderate to severe breathlessness (>4/10).[3,4] Across centres, the investigators suggested the assessment and proper documentation of breathlessness as an important part of the patient-centred approach for management of breathlessness. Breathlessness is assessed primarily through patient self-

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Received: 02 December 2024 **Accepted:** 22 April 2025 **EPub Ahead of Print:** 16 June 2025 **Published:** XXXXXX **DOI:** 10.25259/IJPC_344_2024

report using tools like the numerical rating scale (NRS), as it is a subjective experience.[5] A 2019 systematic review encompassed the physical, emotional, spiritual, social, control and contextual aspects of 'total breathlessness' [Figure 1].[6]

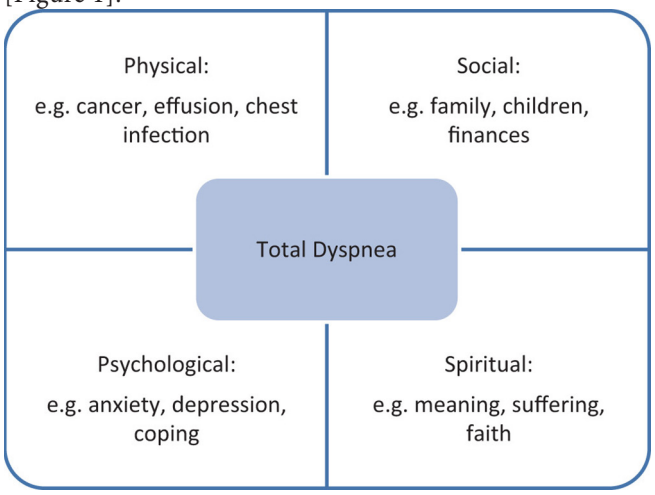


Figure 1: Concept of total breathlessness.

According to American Society of Clinical Oncology guidelines, chronic breathlessness requires both pharmacological and non-pharmacological interventions to address multidimensional suffering.[7,8] The breathing, thinking and functioning model [Figure 2] identifies three main cognitive and behavioural reactions to breathlessness that can worsen and perpetuate the symptom through vicious cycles.[9] Multidisciplinary team (MDT) interventions are crucial for lifestyle adjustments to preserve functionality, alleviate anxiety and train in breathing techniques.[8,10]

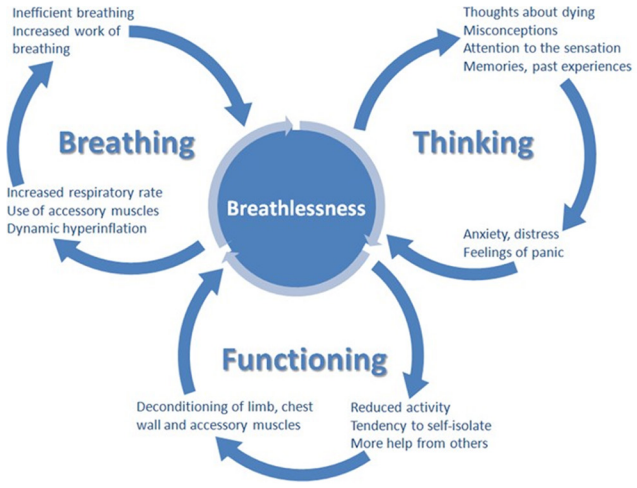


Figure 2: The breathing, thinking and functioning clinical model: A proposal to facilitate evidence-based breathlessness management in chronic respiratory disease.

In December 2021, MDT comprising doctors, nurses, clinical psychologists, medical social workers, physiotherapists and administrative staff was inducted at Homi Bhabha Cancer Hospital and Research Centre (HBCH&RC) in the Department of Palliative Medicine. The standard operating protocol (SOP) for non-pharmacological interventions (NPIs) was developed by the department in 2022. It was presented in the 'Non-Pharmacological Management for Breathlessness' video, created and presented by the Department of Palliative Medicine, HBCH&RC, Visakhapatnam, at the IAPCON Conference 2022 under the theme 'Nurses in Action – Best Practices in Empathy and Empowerment' [Figure 3].

As routine practice, breathlessness was assessed and documented using the NRS in the Edmonton Symptom Assessment System.[11] This audit was conducted to determine compliance with the documentation of breathlessness and NPIs.

The research protocol was approved by the Institutional Ethics Committee (Project 12000038).

Aim of the study

Primary objective

1. To study the documentation of breathlessness in palliative care outpatient department (OPD), in-patient department (IPD) and Home Visit before and after implementation of the SOP.
2. To study the documentation of the NPI planned/done for breathlessness.

Secondary objective

- Study symptom clusters associated with breathlessness.

MATERIALS AND METHODS

The audit cycle involved the analysis of case records in patients with cancer to evaluate the documentation of breathlessness and NPIs.

Set Standard

1. All patients with a diagnosis of cancer visiting palliative OPD, in IPD or during a visit to home should have documentation of the presence/absence of breathlessness
2. All patients with breathlessness should have NPIs documented.

Inclusion criteria

- Patients with a definitive diagnosis of cancer seen in OPD, IPD or home care in palliative care.
- Patients in the age group ≥18 years
- Patients who were capable of comprehending/answering.

Exclusion criteria

- Proxy visits without the patient.

Study duration

18 Months.

This audit was conducted in two parts retrospectively: Part 1 included data from March 2021 and data from March 2022, before and after the establishment of the MDT, respectively.

The result of Part 1 informed Part 2 of the audit, which was conducted after incorporating the interventions. This was over two distinct periods: First, a month subsequent to the intervention implementation in February 2023 and March 2023, followed by a second evaluation after an interval of 8 months in September 2023. Data analysis for both periods was carried out utilising the Epi Info software (version 7.6), enabling systematic examination and comparison of documentation practices and intervention outcomes over time.

RESULTS

Part 1

Results from 2021 (n = 391) showed that 68% of patients had documentation of breathlessness, with 0% documentation of NPIs. In 2022 (n = 433), there was an improvement in the documentation of breathlessness (80%) and NPIs (16%).

Part 2

The first intervention was to create codes based on the severity of breathlessness for ease of documentation, as shown in Table 1.

Following this, interventions to train and to comply with the coding and documentation are shown in Table 2.

The documentation of breathlessness was 98.5% (n = 478), 89.3% (n = 600) and 96.7% (n = 736) in February, March and September 2023. In these 3 months, NPI documentation was 90.5% (n = 369), 92.1% (n = 487) and 93.5% (n = 575) in those who reported breathlessness.

Among those with mild breathlessness, 8.5% of patients had no NPI documentation, while 91.5% had NPIB1. In moderate breathlessness, 8% had no documentation, 85.5% had NPIB2, and 6.5% had documented NPIB3. For severe breathlessness, 2.8% had no documentation, 4.3% had NPIB2, 85.1% had NPIB3 and 7.8% had documented NPIBE. In those at end-of-life cases, all had NPIBE documented.

In 2021, symptom clusters with breathlessness included anxiety, fatigue and loss of well-being (all $P < 0.01$). In 2022, depression, fatigue, loss of appetite, and pain were the associated symptom clusters ($P < 0.01$). Similarly, common symptom clusters were fatigue ($P < 0.0005$) and anxiety ($P < 0.00001$) [Tables 1 and 2, Figures 3 and 4].

Table 1: Non-pharmacological intervention codes for breathlessness.

Level	Label	Interventions
Mild (1-3)	NPIB1	✓ Pacing activity ✓ Soft food ✓ Avoid constipation ✓ Pursed Lip Breathing
Moderate (4-6)	NPIB2	✓ Continue of B1 ✓ Use of hand held fan ✓ Comfortable clothing ✓ Cross ventilation ✓ Openly discuss the cause of breathlessness with patient and caregiver ✓ Keeping the door unlocked ✓ Keeping the bell next to the bed ✓ Use of supportive aids
Severe (7 and above)	NPIB3	✓ Continue of B1 & B2 ✓ Positioning: a. Fowlers or semi fowlers position b. Bending forward ✓ Avoid crowd around the patient ✓ Wipe the face with wet cloth
EOL (with oxygen/ medication)	NPIBE	✓ Eliminate non-essential activity ✓ Use of fan ✓ Positioning ✓ Cross ventilation ✓ Soft food ✓ Personalised according to the patient requirement

NPIB: Non Pharmacological Intervention of Breathlessness, EOL: End of life.

Table 2: Interventions implemented.

Measure	Description
Education and awareness sessions	Regular training sessions were held for all department staff
Daily checklist	Implemented to ensure accurate code documentation in the EMR
Staff reminders	Reminders about codes and NPI documentation were given to both new and existing staff
Code display	Codes were prominently displayed on a department board for quick reference

NPI: Non-pharmacological intervention, EMR: Electronic medical record

DISCUSSION

The results from the audit of breathlessness and NPI documentation show significant improvements over time. In 2021, documentation of breathlessness was recorded at 68%, with no documentation of NPIs. By 2022, breathlessness documentation improved to 80%, and NPI documentation, which was initially absent, increased to 16%. With the introduction of targeted interventions, including implementation of SOP, staff training, a documentation checklist and code reinforcement, the documentation saw further enhancement. Specifically, breathlessness documentation reached 98.5% in February 2023, 89.3% in March 2023, and 96.7% in September 2023,

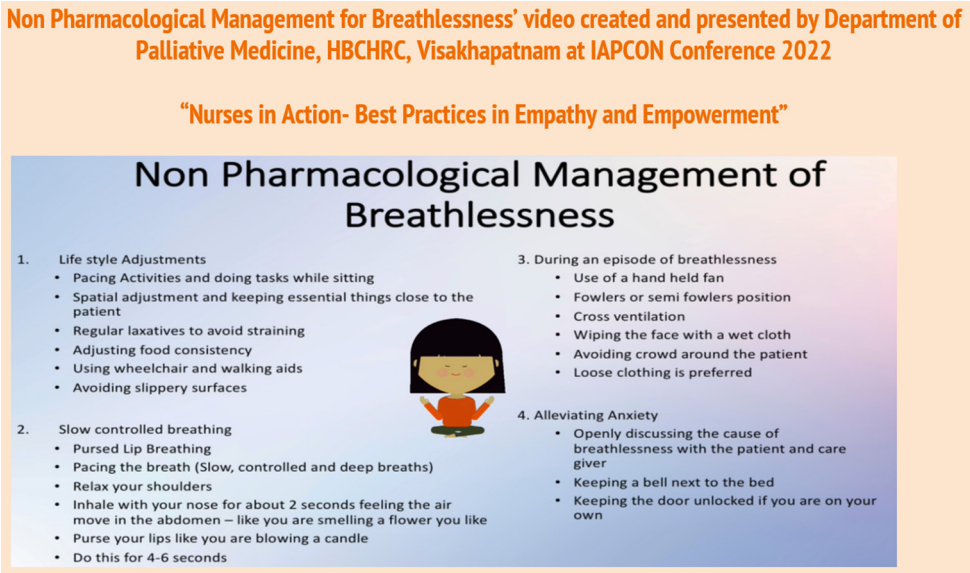
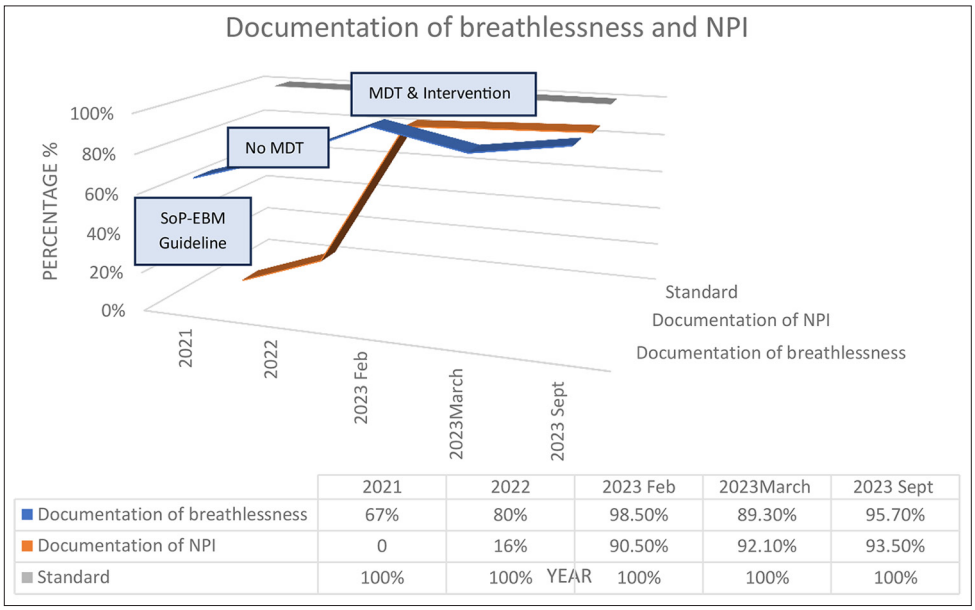


Figure 3: Non-pharmacological intervention for breathlessness was based on Evidence-Based Management Guidelines in 2020. Homi Bhabha Cancer Hospital & Research Centre (HBCH & RC)



	2021	2022	2023 Feb	2023March	2023 Sept
Documentation of breathlessness	67%	80%	98.50%	89.30%	95.70%
Documentation of NPI	0	16%	90.50%	92.10%	93.50%
Standard	100%	100%	100%	100%	100%

Figure 4: Run chart of the audit cycle with data of breathlessness and non-pharmacological intervention. MDT: Multi disciplinary team, SOP: Standard operating procedure, EBM: Evidenced based medicine guideline. NPI: Non-pharmacological intervention.

while NPI documentation improved to 90.5%, 92.1% and 93.5%, respectively. These improvements and adherence to documentation can be attributed to the new SOP with codes and MDT involvement. Structured protocols and MDT approaches have been shown to improve breathlessness management in palliative care settings.[12]

The Palliative Performance Score (PPS) data for patients observed in both phases show individuals falling within the 50–70% PPS range. The results showed that most patients' NPI codes aligned with their breathlessness severity. Variations in the trajectory of the disease patient performance status might require personalised NPI and modifications from standard NPI codes.[13] This data underscores the need for longitudinal assessment and tailored NPI interventions.

Despite improvements, challenges such as documentation variability, training gaps and communication issues persisted. Bausewein *et al.* emphasised the need for consistent training to improve documentation and management[2] while Booth *et al.* highlighted the role of structured communication strategies.[14]

Addressing these challenges through targeted interventions can further enhance documentation and management practices.

The audit highlights progress made in documentation practices due to the implemented strategies. While achieving a 100% documentation rate remains a goal, the improvements observed indicate a positive impact on both breathlessness and NPI documentation. Along with ongoing training, regular audits, and further research are needed to study patient related outcomes following the interventions.

CONCLUSION

This audit cycle demonstrates the significant impact of an MDT and standardised protocols on improving the documentation of breathlessness and NPI in palliative care. The findings emphasise the importance of ongoing training, structured communication and targeted interventions to address challenges in documentation practices. This could help in future research on patient related outcomes.

Acknowledgment: The authors would like to thank CIPLA Foundation, multidisciplinary team members, staff and all those who contributed to the improvement in documentation and patient care practices.

Ethical approval: The research/study was approved by the Institutional Review Board at Homi Bhabha Cancer Hospital and Research Centre, approval number 12000038, dated 19th September 2022.

Declaration of patient consent: Patient consent was not required as there are no patients in this study.

Financial support and sponsorship: Nil.

Conflicts of interest: There are no conflicts of interest.

Use of artificial intelligence (AI)-assisted technology for manuscript preparation: The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

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How to cite this article: Karim A, Viswanath V, Priyanshu, Ramani D, Fernandes D, Miriyala R, *et al*. An Audit Cycle to Evaluate the Improvement in Documentation of Breathlessness and Non-Pharmacological Interventions in Palliative Care Services. Indian J Palliat Care. doi: 10.25259/IJPC_344_2024