Body-mind interventions for breathlessness-related distress in advanced disease: a realist review

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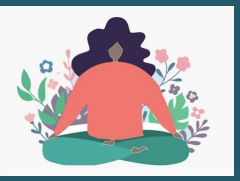


1. Background & Overview

- Chronic and acute episodic breathlessness affects >2 million adults in the UK living with advanced malignant and chronic disease, and causes high rates of emergency admissions. [1]
- Fear, cognitive problems and comorbidities affect engagement with pulmonary rehabilitation and self-management support. [2]
- Body-Mind interventions (BMi) are a broad "family" of holistic practices adapted from Eastern spiritual/health traditions targeting the complex relationship between sensory and affective distress and promoting wellbeing. [3,4]
- The evidence base is intervention-specific and mixed; MRC guidance suggests seeking explanations of causal processes that may "bridge" different programmes and contexts. [5]

2. Review Aim

Using realist synthesis, to develop a framework and guidance for the use of BMi in the context of breathlessness-related distress in advanced disease, and explore what individual, interpersonal and institutional factors enable or constrain integration into existing models of care.

What is a realist review?
Rooted in realist philosophy [6] realist review is a theory-driven, pragmatic method of evidence synthesis which seeks to explore *how* and *why* complex interventions work in different contexts, presented as context-mechanism-outcome configurations (CMOCs). [7]

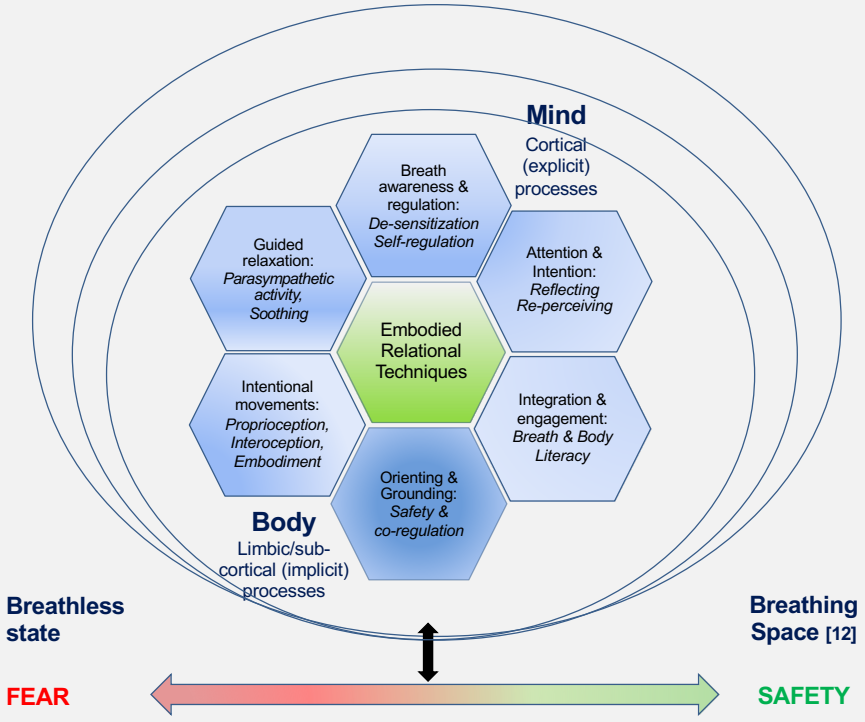
3. Methods

Following current quality and publication standards. [8]

1. Concept defining (*What are we calling body-mind interventions? What do we mean by breathlessness-related distress?*) and developing initial programme theories drawing on clinical experience, informal literature searching and discussion with groups of patient stakeholders n=12 and content experts n=9. Refine focus of review in consultation with health professionals n=12 and service leads/commissioners n=2.
2. Systematic search across 8 databases for primary studies meeting broad criteria for breathlessness AND advanced disease AND body-mind interventions, plus iterative searching beyond initial terms and across disciplines as needed. Successive screening with 2nd reviewer checks (10%), Data extraction using bespoke templates to screen for richness and rigour.
3. Synthesis of data across sources to refute, corroborate and refine the programme theory, aiming for enough trustworthy data to produce a final set of CMOCs that are coherent, plausible and practical for dissemination to relevant stakeholders.

5. Initial Programme Theory

The experience of breathlessness is characterised by instinctive fear responses which affect brain, body and behaviour. BMi share a set of *embodied techniques* that – in the context of a safe person/people/place – enable the co-creation of a regulated psychophysiological state i.e. reduction in sensory and affective distress. A focus on cognitive processes (thinking) may be less helpful than bottom up practices targeting implicit and instinctive responses to threat linking body, breath and mind (in that order). Once safety is established, a breathless person can then begin to develop conscious skills - *Breath and Body Literacy* - which can be integrated into every day life.



What is a programme theory?
A middle-range, transferrable theory about what an intervention is expected to do and how it is expected to work presented in abstracted form usually explained visually by a model or diagram.

4. Substantive theory

What is substantive theory?
Pre-existing or established theories within a particular discipline that help to explain why things happen the way they do. In this study – linking neurophysiological and psychodynamic theories provide a new lens to understand generative causation for the effect of BMi mechanisms on outcomes experienced in both body and mind.

- Bayesian brain hypothesis; links brain, behaviour and breathlessness expectation. [9]
- Attachment and Affect Regulation theory: Links fear-safety responses to implicit processes facilitated by embodied relational connection. [10,11]

6. Search Results (initial findings)

- Of 4466 studies retrieved **we included n=39 studies relevant** to a UK context (UK, Europe, North America, Australia):
  - 43.5% were Mindfulness-based interventions, (33.3% Yoga; 23% Tai chi/Qigong).
  - 38.4% were in chronic obstructive lung disease, 41% were in lung cancer, 15% were in heart failure with 6% other (advanced cancer n=2, interstitial lung disease n=1, adults with cystic fibrosis n=1)
  - 64% of studies were in N. America, 20.5% in Europe, 13% in UK, and 2.5% in Australia
- We "tagged" studies of single components (e.g. mindful relaxation only, yoga breathing only) for later analysis.
- Studies where aspects of BMi were included in other complex interventions were tagged for later analysis (to explore implementation).

Early analysis:

- BMi share a set of core and interacting features.
- Yoga and Tai chi/Qigong interventions are movement-and-breath focused, viewing BMi as complementary or alternative to traditional exercise programmes with targeted psycho-social-spiritual benefits.
- Mindfulness-based programmes self-identify as psychological interventions, prioritising cognitive-affective outcomes.
- Involving life partners in BMi programmes promotes relational connection and breathlessness support to end of life.
- Mindfulness-based 8 week programmes have high drop-out rates with evidence of increased breathlessness-related distress in some people.
- Responsive tailoring of protocols to suit individual needs by a trusted teacher/therapist supports engagement, trust and body-breath confidence.

Key References

[1] Maddocks *et al* 2019 Health Services and Delivery Research, [2] Lovell *et al* 2019 Journal of Pain and Symptom Management, [3] Desveaux *et al* 2015 Medical Care, [4] Shapiro *et al* 2006 Journal of Clinical Psychology [5] Skivington *et al* 2021 BMJ, [6] Bhaskar 2008, [7] Pawson & Tilley 1997, [8] Wong *et al* 2013, [9] Marlow *et al* 2019 Current Opinion in Supportive & Palliative Care [10] Schore 1994, [11] Holmes 2020 [12] Hutchinson *et al* European Respiratory Journal

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