Respiratory clinicians' perspectives on the hand-held fan for chronic breathlessness from chronic obstructive pulmonary disease (COPD)

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IMPACCT

Improving Palliative, Aged and Chronic Care through Clinical Research and Translation
University of Technology Sydney (UTS)

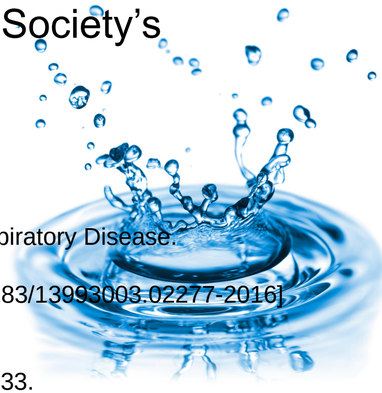
Background

Chronic breathlessness

- A debilitating syndrome in people with COPD and other life-limiting conditions that persists despite optimised, guideline-concordant pharmacological treatment of the underlying medical condition(s) (Johnson, 2017).
- Sensory, affective and impact dimensions can be ameliorated with non-pharmacological and pharmacological strategies.

The hand-held fan

- A cheap, effective and portable non-pharmacological intervention that appears to (Luckett, 2017; Swan, 2019):
  - benefit around 80% of people with chronic breathlessness;
  - complement other strategies like breathing techniques and relaxation.
- Research on mechanisms is ongoing, but likely to include physiological (e.g. cooling of trigeminal nerve) as well as psychological components (e.g. distraction).
- Recommended to patients by ‘breathlessness services’ (Bausewein, 2018) and the American Thoracic Society’s guidance on ‘*Assessment and palliative management of dyspnea crisis*’ (Mularski, 2013)
- Anecdotal evidence suggests the fan is not widely implemented in specialist respiratory care.



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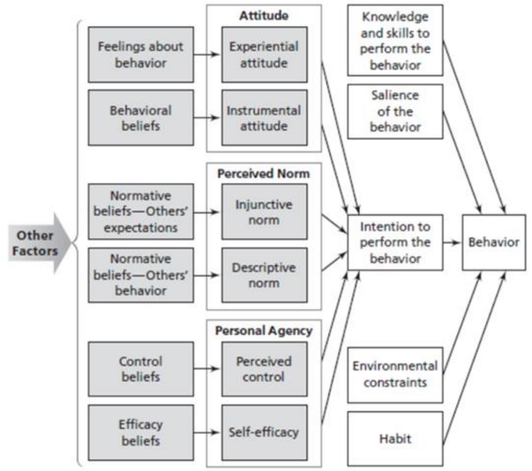
Study aim

To understand barriers and facilitators to respiratory clinicians recommending the hand-held fan to patients with COPD as a cheap and effective non-pharmacological strategy for chronic breathlessness

Study design and method



Design

Qualitative approach with focus groups

Methods

Participants

Clinicians (medical, nursing, allied health) working in respiratory care at two tertiary/quaternary hospitals in Sydney

Data collection

- Focus groups held face-to-face or via Zoom by social scientist (TL) and respiratory nurse (MR)
- Questions asked about current fan-related practice, and perceptions regarding benefits, harms and mechanisms, and other factors influencing implementation

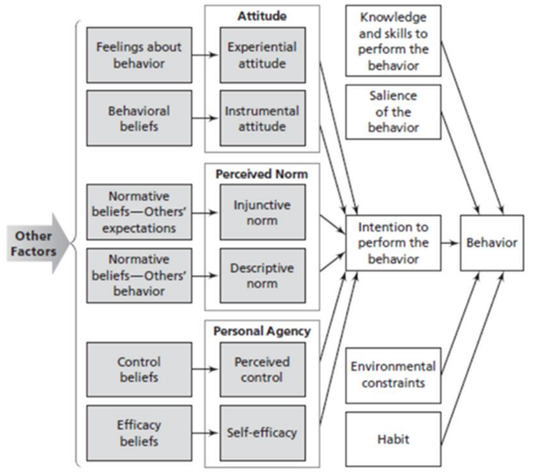
Analysis

- An integrated method using first inductive then deductive approaches
- Deductive coding used the Integrated Behavioural Model (IBM) to explore factors influencing **clinician intention** to recommend the fan

Results – Sample characteristics (N = 49 in 9 focus groups)

Characteristic			N (%)
Gender	Female		36 (73.5)
	Male		13 (26.5)
Setting	Inpatient		34 (69.4)
	Inpatient/outpatient		8 (16.3)
Discipline	Medical		13 (26.5)
		Registrar	12 (24.5)
		Consultant	1 (2)
	Nursing		30 (61.2)
		CNC	1 (2)
		CNE	1 (2)
		CNS	2 (4.1)
		EEN	3 (6.1)
		RN	21 (42.9)
	Allied health		6 (12.2)
		Physiotherapist	5 (10.2)
		OT	1
Years working in respiratory care	< 1 year		6 (12.2)
	1-5 years		23 (46.9)
	6-10 years		8 (16.3)
	>10 years		12 (24.5)
Proportion of patients recommended the fan	All or nearly all		10 (20.4)
	Most		17 (34.7)
	Some		19 (38.8)
	None		3 (6.1)

Results – Integrated Behavioural Model (IBM)



Attitudes

<u>Instrumental attitude</u>

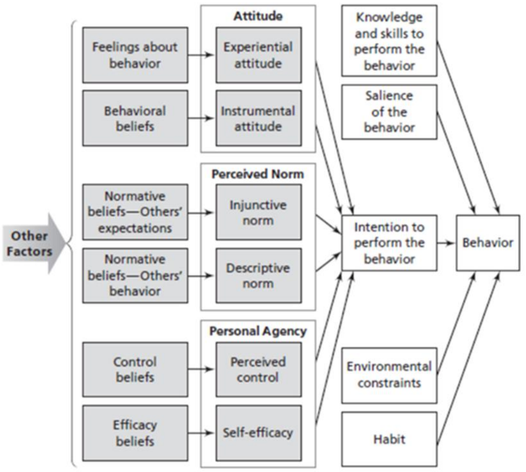
- The most influential factor was a belief that fan-related benefit outweighed any disadvantages or harms

Risks/harms:

- Only one serious harm identified - potential for spreading COVID-19, with views differing between hospitals
- Patient over-reliance the only other disadvantage that dissuaded anyone from recommending the fan
- Other potential harms raised but dismissed included:
  - risk of injury from the blades ("*that stuff [the blades are made of] is soft*" Hospital 1, Advanced trainee)
  - fire from batteries ("*lithium batteries burn hot and durably, I think*" Hospital 2, Physician)
- Patient belief-related barriers that the fan might worsen a pollen allergy, cause colds via draft, or be too effeminate
- Lack of perceived harms encouraged participants to take a "*why not try it?"* (Hospital 1, Nurse) approach to recommending the fan, even when uncertain whether a given patient might benefit

"If I was worried that it would do the patient harm, yes, I would have more questions and reservations about it, but I just don't feel that way about hand held fans" Hospital 1, Advanced trainee

Results - Integrated Behavioural Model (IBM)



Knowledge about the fan's effectiveness

Hearing about the fan

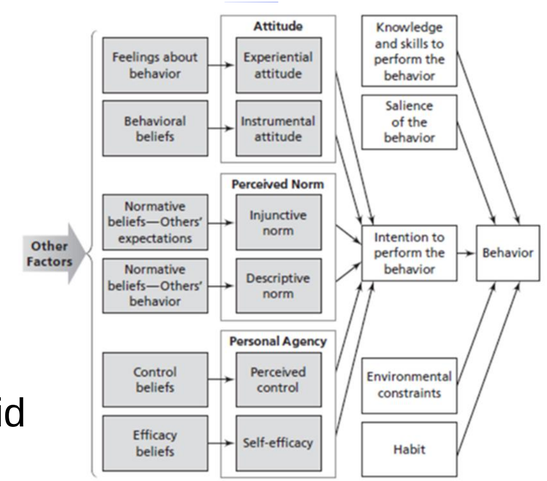
- Barriers included a "*lack of knowledge or a lack of awareness of how a fan can help*" Hospital 1, Pulmonary rehabilitation
    - Doctors highlighted lack of mention about fans in medical training
    - Only a few participants appeared familiar with research evidence for fan, and even these identified clinical experience as a more important driver

"*So, I read up about it, started recommending to patients, and found that it does really help them with their breathlessness*" Hospital 1, Nurse

- Most participants learnt about the fan through patients' endorsement, and perceived that patients usually learned through this source too

"*Patients who are already using the fan encourage other people to use the fan*" Hospital 1, Nurse

Results - Integrated Behavioural Model (IBM)



Knowledge and beliefs about the fan's mechanisms

- Less important than benefit in determining whether participants recommended the fan, but did determine which sub-groups of patients they chose to offer it to:
  - Participants who believed the fan's mechanism to be primarily psychological recommended it mostly to patients with anxiety

    "We also get panic attacks very frequently, like anxious patients. We can recommend [the fan]" Hospital 2, Inpatient nurse

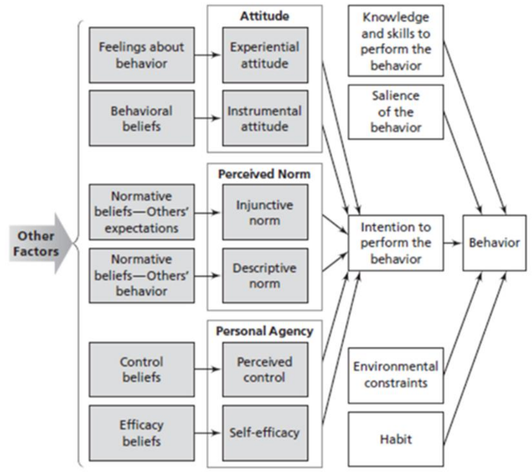
  - Clinicians in three focus groups also reported reserving the fan for patients in the "palliative" or "end-stage" (Hospital 2, Inpatient nurses) phase of disease after other interventions had failed

    "*I don't bring it up for those individuals who are not quite accepting of their situation, in terms of their diagnosis*" Hospital 2, Advanced trainee

  - Inpatient nurses prioritized other management interventions during an acute exacerbation, considering the fan suitable only for everyday management

    "Yeah. If there's an acute deterioration and their respiratory rate is very high they've dropped their sats [oxygen saturation] I'm not going to be recommending a fan" Hospital 2, Inpatient nurse

Results - Integrated Behavioural Model (IBM)



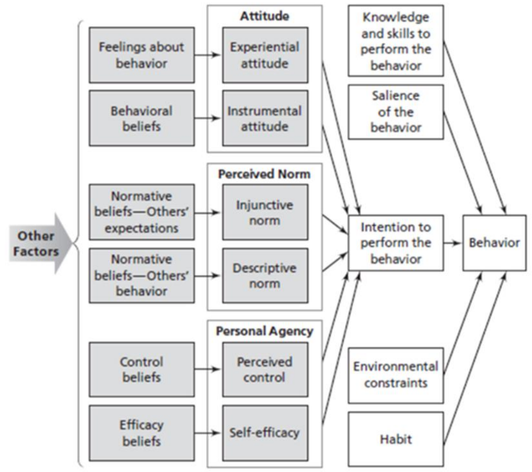
Personal agency

<u>Self-efficacy</u>

- Unsure which type of fan to recommend, but fan sold and branded by Lung Foundation Australia lent "*credibility*" (Hospital 1, Inpatient nurse)
- Various views/confidence concerning how to train patients to use the fan
  - minimal ("*I tell them where to buy the fan, tell them where to point it*" Hospital 1, Advanced trainee)
  - more in-depth explanations about mechanism and situations in which to use the fan, tailoring to each patient's needs
- Participants also varied as to whether they combined the fan with other non-pharmacological interventions

"From a physio perspective, with all our other breathing strategies as well, it works well, positioning, timing, pacing activities. So, it's never on its own ... It's an adjunct to what we would normally do" Hospital 2, Allied health

Results - Integrated Behavioural Model (IBM)



Environmental factors

- In inpatient setting, lack of hand-held fans on the ward forced reliance on desktop fans, which often failed to meet demand

"*If we knew we had heaps of them there, I think we'd see an increase in people offering them because you've got them to offer*" Hospital 2, Inpatient nurse

Salience and habit

- Inpatient care time pressured and procedurally-driven, so any aspect of care not included in protocols unlikely to be implemented unless patient specifically requested

"*You get that sort of tunnel vision, not necessarily task-oriented, but it's not part of your protocol*" Hospital 2, Inpatient nurse

Study limitations

- Generalisability of findings limited by:
  - focus on only two hospitals and mostly inpatient setting
  - sampling and social desirability biases, which we attempted to offset by:
    - scheduling focus groups during routine meetings
    - ambiguous framing of the study aim in the PIS, and
    - an open approach to questioning that focused on view of people not recommending the fan first
- IBM provided just one ‘lens’ through which to view barriers/facilitators, focused on clinician intention

Summary and conclusions

- Both **clinician- and service-level interventions** are needed to drive implementation of the hand-held fan in specialist respiratory services for chronic breathlessness.

- Clinician behaviour change strategies should increase clinician ***capability***, ***opportunity*** **and** ***motivation*** to recommend the fan (Michie, 2011):
  - as **first-line intervention** for breathlessness (rather than reserving it for patients who are anxious or palliative/end-stage);
  - **during breathlessness crises** as well as for background breathlessness; and
  - **in an integrated way with other strategies**.

- Service-level initiatives to **make fans available and incorporated into routine care in hospitals** will overcome the main environmental barrier to implementation, and are likely to be cost-effective.

Reference
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“There’s a big difference of thinking ‘well this is normal - nobody gives a shit, they just give me a prescription - this must be it’ … That’s what I’ve been like for 8 years until I met you, and now I find that you’ve introduced me to a fan that’s 4 quid [pound sterling] from Marks & Spencers [British chain store] (laughs), and it’s helped me, and I appreciate the help!” (British man with COPD)

The CHAFF Study, led by Dr Flavia Swan (University of Hull, UK)

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