

Respiratory Physiotherapists have a good understanding of how to use Thoracic Ultrasound but barriers to its implementation are numerous.

Diagnostic Thoracic Ultrasound imaging - an exploration of physiotherapists' interest and use in clinical practice: A national survey.

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PURPOSE

Diagnostic thoracic ultrasound (TUS) is an imaging modality used to assess the lung and has enhanced accuracy when compared to chest radiography (CXR). This ability to accurately assess pulmonary pathologies would be a useful skill for respiratory physiotherapists to possess. Physiotherapists do not routinely learn to perform TUS; however, they are now beginning to perform TUS as autonomous practitioners. Training opportunities are limited so it is currently unknown how they are learning TUS, how they are using TUS in their practice, or any factors they may encounter when trying to integrate TUS into practice. The aim of this study was to explore the use of TUS by respiratory physiotherapists through a national UK-wide questionnaire. This information could be used to aid the future development of training and implementation strategies to assist physiotherapists to integrate TUS in their practice

METHODS

A questionnaire comprising of open/closed questions was distributed that explored professional attributes of physiotherapists in the UK who define themselves as a 'respiratory physiotherapist'. Distribution was by hand at three national study days and via a specialist newsletter containing a link to a SurveyMonkey™ questionnaire with a request to pass it on to other respiratory physiotherapists through a "snowballing" selection process. The questionnaire was open on SurveyMonkey™ for a six week period between July and August 2018.

RESULTS

A total of 133 questionnaires were completed and returned. Of the 133 respondents, 23% (n=31) reported that they used TUS imaging in clinical practice with 76% (n=101) reporting that they did not. The most common roles of TUS in practice were to: enhance the ability to differentially diagnose respiratory pathologies, aid respiratory assessment and support clinical reasoning. Respondents also identified specific roles in guiding weaning, diaphragm function assessment and as an outcome measure to monitor pathology changes (Table 1). Of the 133 respondents, 44% (n=58) reported that they had undertaken training in TUS imaging and 56% (n=75) reported that they had not. Only ten respondents had completed a formal assessment of competency. Attendance at a study day or course was reported as a popular option along with the delivery of face-to-face teaching and practical hands-on sessions. Potential TUS trainees also reported the desire to have

on-line learning material and regular access to a mentor. The most common factors identified regarding TUS implementation were team support, ultrasound machine availability/cost, time pressures, mentor availability, evidence based support for its use and availability/cost of training (Table 2). The majority of responses for all factors were predominantly negative with the exception of "team support" which was more evenly balanced.

Conclusion: This nationwide survey has, for the first time, provided an understanding of TUS practice amongst respiratory physiotherapists in the UK. The survey results demonstrated the barriers that inhibit current practice and highlighted the importance of mentors to support professional progression. There was a good understanding by all respondents regarding the clinical application of TUS.

Implications: These findings are being used to inform and underpin the development of professional guidance from physiotherapy bodies, to support training development and ensure safe practice of TUS in the UK.

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ETHICAL APPROVAL

Blackpool Research and Development department deemed that ethical approval for this study was not required.

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Role of Thoracic Ultrasound	No. reporting this role
Enhanced differential diagnosis	15
Aid respiratory assessment	10
Aid clinical reasoning	9
Weaning guidance (from mechanical ventilation)	6
Diaphragm function	5
Monitoring tool/outcome measure	4
Lung ultrasound score	1
In research	1
Real-time imaging	1
Imaging obtained faster	1
In multi-disciplinary team discussions	1

Table 1: Summary of responses from participants who use Thoracic Ultrasound (n=31) when asked to briefly state the role(s) of the modality in their practice.

Factors identified	Total
Team support	45
Availability/cost of a machine	37
Time pressure	35
Availability of a mentor	28
Evidence to support TUS use	26
Availability/cost of training	19
Personal attitude	11
Governance	6
Total	207

Table 2: Factors identified that have influenced all questionnaire respondents ability to use thoracic ultrasound.

