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GOOD PRACTICES

Supporting Health Professional Students to Navigate Diagnostic Uncertainty in Pain

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Abstract

Background: **Diagnostic uncertainty is a ubiquitous feature of health professional practice, posing complex challenges for both novice and experienced health professionals. Diagnostic uncertainty in practice encompasses various domains, including knowledge, perception, and communication.**

Purpose: **This paper explores the literature to provide strategies aimed to prepare health professional students for diagnostic uncertainty in the management of pain.**

Results and discussion: **Strategies and concepts encompass re-evaluating traditional educational norms, recognizing the role of heuristics in decision-making, integrating clinical reasoning skills, and reflection through Balint Groups. Moreover, this paper advocates for open dialogue and facilitating a culture that normalizes uncertainty within classroom and clinical settings, including assessment.**

1. Introduction

Diagnostic uncertainty is an inherent feature of health professional practice, creating a complex challenge confronting both new and experienced health professionals. Navigating symptom interpretation, differential diagnoses, and treatment plans in environments marked by variable patient presentations and outcomes has been highlighted as a major challenge in practice [1]. In the case of pain, diagnostic uncertainty includes navigating an explanation of the patient's pain experience across a biopsychosocial spectrum [2], while considering symptoms that are often fluctuating, subjective and unquantifiable. The experience of diagnostic uncertainty is prevalent, and health professionals' responses to it have wider implications, including impacting their clinical decision making, and the excessive or unnecessary use of imaging and other investigations, increased healthcare utilization [3] and costs [4].

Students and novice health professionals often struggle with navigating diagnostic uncertainty in the context of pain, predominantly due to their limited clinical experience and knowledge, and a lesser capacity for information synthesis and pattern recognition [5]. Students and novice health professionals must also grapple with the emotional repercussions of uncertainty, a scarcity of role models who openly communicate about uncertainties, and a lack of educational opportunities to experience and manage these challenges during their training [5,6]. This is further exacerbated by inherent beliefs from students that definitive diagnoses convey a sense of competence [1], thus impacting self-belief, confidence and how they subsequently view successful professional−patient relationships.

2. Supporting students in diagnostic uncertainty

Health professional education providers and educators must consider how health professionals can be adequately prepared for the cognitive, emotional, and ethical domains of navigating and communicating uncertainty in practice [7]. The following

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sections outline proposed ways in which students can be supported in navigating and communicating diagnostic uncertainty in pain throughout the continuum of health professional education.

2.1. Recognising traditional norms in practice and education

Shaping health professional education that equips learners to navigate and manage diagnostic uncertainty in pain must involve looking critically at our traditional educational practices and norms. Health professional education has historically emphasized diagnosis as the primary step in clinical decision-making, often using deductive algorithms and structured approaches that may not accommodate the complexities of non-traumatic or persistent pain. While these approaches are valuable in triaging acute or traumatic pain or in identifying the presence of serious medical conditions, they do not allow future professionals to navigate the inherent uncertainties of non-traumatic or persistent pain presentations. Of further concern in health professional education is the controversial tendency to endorse and often reward students for displaying certainty in their diagnostic conclusions and related clinical decision-making processes [5]. Consequently, traditional approaches to clinical assessment may perpetuate a cycle of educational inequity, by undervaluing the diverse expressions of understanding from diverse cultural backgrounds. Students displaying or expressing uncertainty might be misconstrued as having a lack of knowledge or competence, potentially worsening unhelpful ethical and emotional responses [6,8]. Such norms may raise further questions of cultural privilege and subsequent discrimination in the classroom which is important for education providers to potentially recognize, acknowledge and address.

2.2. Acknowledging heuristics in the face of uncertainty and shifting towards clinical reasoning

Heuristics are cognitive shortcuts that aid health professionals and students in decision-making, enabling efficiency despite incomplete information or time constraints. Santhosh et al. identified common heuristics that health professionals tend to rely upon when faced with uncertainty that, although creating efficiency in decision making, may lead to errors [9]. These include assumptions made during clinical decision making based on previous clinical experiences and typical clinical patterns, which although useful, are potentially error-prone. These heuristics contrast with the complex information processing required for clinical reasoning, thus carry inherent risks.

Teaching and learning strategies in health professional education should promote a nuanced approach to clinical reasoning, moving beyond reliance on simple heuristics and rigid deductive logic. This may include encouraging students to derive examples about how simple heuristics are applied in everyday settings; where they are helpful and where they can become an issue, especially with concern to decision making and safety. Case studies can be used to illustrate how reliance on deductive approaches to reasoning can lead to different outcomes and educators can share with students their clinical reasoning processes in action. Role-play and simulation can be used, and scaffolded, to provide patient encounters where students can practice, experience and reflect on the outcomes of different approaches to clinical reasoning in a controlled learning environment. Within these scenarios, application of social theory to denaturalise habitual and deductive ways of thinking may offer important insights. Encouraging reflective practices, such as journaling and group discussions, helps students critically examine their decision-making processes, assumptions, and the broader implications of their clinical judgments, fostering a deeper engagement with the complexities of diagnostic uncertainty and patient care.

2.3. Providing direct learning opportunities to practice communicating uncertainty

Effective patient-provider communication is pivotal in determining the outcomes of diagnostic uncertainty for the patient and the clinician–patient relationship. A well-informed discussion about the nature of the patient's pain, the reasons for diagnostic ambiguity, and the commonality of such experiences can alleviate patient anxieties. When providers communicate transparently about the limitations of current diagnostic understanding, it may paradoxically increase trust. Santhosh [9] proposes a four-step model to guide patient communication in the presence of diagnostic uncertainty; explicitly acknowledging uncertainty, eliciting the patient's reaction to uncertainty, deepening the therapeutic alliance through empathy, and clearly conveying next steps for understanding the patient's problem and formulating a management plan. Such a framework can help educators to guide students in navigating communication, but more broadly, can be considered by all health professionals where students may benefit from observing successful patient encounters. Witnessing and reflecting on successful management of such cases may enhance students'

confidence in future patient interactions, fostering their self-efficacy in clinical settings [10].

2.4. Creating an open dialogue and culture around uncertainty

Health professional students often enter their training and subsequent professional lives with an expectation that uncertainty will diminish with increased experience and knowledge. To counter this notion, it is essential for educators to lead discussions on normalising diagnostic uncertainty. This approach involves more than just student interactions; it extends to cultivating environments, both classroom and clinic, where uncertainty is normalized among teams and colleagues, recognizing the significant influence of modelling on student development. Crehan and Scott [11] specifically advocate for Balint groups to help both students and professionals manage uncertainty. Balint groups offer a structured, discussion-based format for exploring the complexities of patient care, encouraging the sharing of experiences and emotional responses to clinical situations, thus helping navigate the emotional complexities and uncertainties involved in patient interactions. During Balint groups, participants work within a group to present cases where they have experienced a strong reaction such as distress, frustration, surprise, difficulty, or uncertainty. This process encourages the sharing of experiences and feelings, which often reveals that uncertainty is a common and challenging aspect of clinical practice. Participants also gain insights into their own reactions and decision-making processes, enhancing their ability to cope with uncertainty.

3. Conclusion

This paper outlines key strategies for supporting health professional students in navigating diagnostic uncertainty, including re-evaluating educational norms that prioritize certainty, enhancing understanding of heuristics and clinical reasoning, emphasizing communication skills around uncertainty, and promoting a culture that normalizes the experiences uncertainty.

Ethical statement

As a good practice article, ethical approval was not required for this manuscript.

Other disclosure

None.

Conflicts of interest

The authors declare that there are no conflicts of interest associated with this manuscript. We have no financial, personal, or professional relationships that could be construed as potential conflicts of interest that could influence the analysis, or interpretation presented in this journal manuscript.

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