Bees, Owls and Cyborgs:

The Dual Process Theory & Nurses' Pressure Ulcer Related Decision Making

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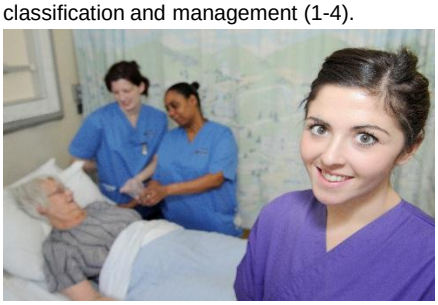
Introduction

Consistent delivery of safe high quality health care relies on nurses' ability to make appropriate judgements and decisions about the treatment of patients. Nurses have to make a number of judgements and decisions about pressure ulcer prevention, classification and management (1-4).



Studies (2-4) have identified that nurses find it challenging to distinguish between different grades of pressure ulcers and between pressure ulcers and moisture lesions. Incorrect judgements about the state of a patient's skin or pressure ulcer can lead to the implementation of inappropriate or ineffective measures (1-3).

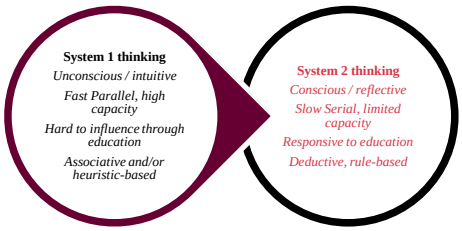
Nurses play a pivotal role in pressure ulcer prevention and management, so understanding how they make judgements and decisions is integral to improving the quality and safety of the skin care that patients receive (5-7).

The Dual Process Theory of Decision Making

Recent developments in decision making theory and research have contended that there are two (system 1 and system 2) distinct ways of thinking that people use to make judgements and decisions in what is known as the dual process theory of decision making (8, 9). Each of these ways of thinking has its own characteristics (see Fig. 1).

The complex interplay of system 1 and system 2 thinking is an active subject of research but, it is nonetheless worth exploring how the dual process theory may help account for what is known about nurses' pressure ulcer related decision making.

Fig. 1: Key characteristics of system 1 and system 2 thinking



Discussion

System 1 thinking is the default setting for human perception. It is subconscious, heuristic and intuitive and it gives rise to quick instinctive decisions (8, 9). Heuristics are subjective assessments, decision rules and cognitive mechanisms that people use to simplify their decision making, especially when they are facing time pressures (11).

The simplified and rapid thought inherent in heuristics can give rise to biases such as prejudice and overconfidence, which can result in poor judgements and decisions (8, 9, 11). This may explain in part why a number of studies have identified that nurses find it challenging to make accurate decisions about pressure ulcer classification, prevention and management (1-4).

Interpreting the findings of studies (1-4) on nurses pressure ulcer related decision making using the dual process theory, it could be argued that some nurses are working hard like **"busy bees"** and do not afford themselves the time that is required to make appropriate pressure ulcer related judgements and decisions.

System 2 thinking is a rational and logical approach to decision making, but it requires the focused application of a person's mental and intellectual faculties (6-11). When a person needs to make a number of judgements or decisions in a rational way, sometimes system 2 thinking can be overwhelmed by instincts to reduce the cognitive strain and the person reverts to system 1 thinking (9,11).

Making appropriate decisions about pressure ulcer classification, prevention and management in the clinical environment is challenging for nurses in many settings (1-3). This may be due to the amount of information that needs to be gathered and cognitively processed to make a decision. Therefore, it can be argued that for novice nurses to consistently make accurate pressure ulcer related decisions they would have to have the cognitive abilities of **"clinical cyborgs".**

Studies (10, 11) which explore the dual process theory indicate that experts have an enhanced intuitive process for decision making that is underpinned by pattern recognition, which allows them to decide the best course of action with the experiential information stored in their memory. Experts develop their expertise through practice and reflection on experience; which results in a higher level of expert heuristic or intuitive decision making in contrast to the more emotional intuitive decision making of novices (10, 12). Perhaps, then, expert nurses are **"wise owls"** who are more adept at pressure ulcer prevention decision making than other nurses because of their unique expertise and experience.

Clinical Relevance

The dual process theory appears to offer a possible account for at least some of the reported variations in the pressure ulcer related decision making of nurses in different studies (1-4). It is worth considering that many pressure ulcer related guidelines may in fact require nurses to act as **"clinical cyborgs"** that use system 2 thinking. It may be better to accept that most nurses use system 1 thinking and that expert **"wise owl"** nurses will make better decisions than **"busy bee"** nurses who do not have the same level of expertise.

It may be prudent to put in place measures such as Clinical Decision Support Systems (CDSS) or decision making aids (13, 14) to enable all nurses to consistently make the best possible skin and pressure ulcer related decisions, which could result in improved patient pressure ulcer related outcomes.

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