The role of positive emotion in translating knowledge to practice

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ABSTRACT: *Evidence-based practice is pivotal to quality healthcare. Yet, clinicians do not consistently draw on the knowledge available to them. This may be partly due to the myopic ways in which knowledge translation has been understood and explored. As such, this conceptual paper presents a case for the role of positive emotion in the translation of knowledge to practice, and suggests that this link warrants further exploration. This thesis is justified and achieved by: (1) discussing the inherent challenges of knowledge translation; and (2) presenting the theories of two distinct domains – namely, the broaden-and-build theory of positive emotions and the organisational knowledge creation theory. This paper argues for development of a framework explicating the role of positive emotion in knowledge translation.*

Keywords: Healthcare management; healthcare quality; knowledge translation; knowledge management

Evidence-based practice holds a pivotal place in quality healthcare (Aslakson et al., 2014). This is largely because, 'it aims to provide the most effective care that is available, with the aim of improving client outcomes' (Hoffmann, Bennett, & Del Mar, 2010, p. 6). Furthermore, evidence-based practice facilitates professional accountability and helps to ensure the efficient use of limited healthcare resources, which includes medication, surgical supplies, and clinician-time, among others. Counter to its apparent focus on evidence borne solely from empirical research, contemporary understandings of evidence-based practice suggest it is much more (Wieringa & Greenhalgh, 2015). Literature suggests the integration of evidence into consumer care requires support for a dynamic interplay between high-quality research-evidence, clinician-expertise, consumer (and potentially carer) preferences, available resources, and the context in which care is delivered (Straus, Glasziou, Richardson, & Haynes, 2011).

Yet clinicians do not consistently draw on available evidence to guide their practice (Bryant et al., 2014; Runciman et al., 2012) ENREF_21. Although the reasons for this are diverse, they might be understood as occurring at three levels – the micro, meso, and macro (Hetrick, Simmons, Thompson, & Parker, 2011). Those at the micro level include the complexity of evidence-based practices, perceived or otherwise (Kitson, Harvey, & McCormack, 1998); the practicability of take-home-messages within the research for clinicians (Lenfant, 2003); the perceived urgency of the consumer problem (Gorman & Helfand, 1995); clinician knowledge and skill-base (Lehman, Goldman, Dixon, & Churchill, 2004); the professional and personal experiences of both the clinicians and consumers (Freeman & Sweeney, 2001); clinician belief that relevant information on evidence-based practice is available (Gorman & Helfand, 1995); clinician and consumer opinion on the available evidence (Howitt & Armstrong, 1999; Tomlin, Humphrey, & Rogers, 1999); as well as clinician reluctance to risk the consumer relationship (Veldhuis, Wigersma, & Okkes, 1998). Barriers at the meso level include the availability of fundamental resources and ancillary services (Freeman & Sweeney, 2001; McKenna, Ashton, & Keeney, 2004), professional identities (Asadoorian, Hearson, Satyanarayana, & Ursel, 2010), poor leadership (Marchionni & Ritchie, 2008), as well as organisational philosophy (Asadoorian et al., 2010). And those at the macro level include the availability of

adequate funding, well-governed funding streams, accountable mechanisms that optimise fidelity (Lehman et al., 2004), and system inertia – that is, the tendency for a system to continue to do the same thing irrespective of changes in circumstance (Coiera, 2011).

Collectively, the aforesaid factors suggest that the bridge between evidence (*sensu lato*) and practice may be difficult to establish, let alone maintain. Hence, understanding how to translate knowledge into consumer care is complex, requiring a different approach – one that considers how clinicians 'balance the generic recommendation of a guideline or protocol against the particularities of a case in the here-and-now' (Greenhalgh & Wieringa, 2011b, p. 508). This contrasts with the wealth of research to identify 'gaps' (Buffart, Galvão, Brug, Chinapaw, & Newton, 2014), 'issues' (Smith et al., 2014), and 'poor compliance' (Cloyd, Hernandez-Boussard, & Wapnir, 2013), much to the neglect of practices that are positive and enable individuals to flourish (B.L. Fredrickson, 2001). ENREF_19 ENREF_20 ENREF_17 ENREF_18

A concept that can help to redress this imbalance is positive emotion. Positive emotions have been somewhat confused with positive "affect", which more broadly refers to consciously accessible feelings, such as sensory pleasure and mood that facilitate continued action (Fredrickson, 2004). Fredrickson's (2001) broaden-and-build theory of positive emotion states that certain discrete positive emotions such as interest, joy and pride, not only facilitate continued action, but also have the ability to broaden people's momentary thought-action repertoires, building enduring personal and intellectual resources. This is in contrast to negative emotions, which narrow action tendencies in turn promoting quick decisive action in the face of fear, anger or disgust provoking stimulus. By broadening the scope for attention and thinking, positive emotion has the potential to be a valuable asset when exploring how best to translate knowledge to practice. This is also supported by a body of evidence emphasizing the role of positive emotion in creative problem solving, memory retention and attentiveness (A. M. Isen, Daubman, & Nowicki, 1987; Lam, Spreitzer, & Fritz, 2014; Parke, Seo, & Sherf, 2015; Rego, Sousa, Marques, & Pina e Cunh, 2014).

The aim of this conceptual paper is to connect positive emotion and knowledge translation (KT) within the context of healthcare. This is justified and achieved by: (1) discussing the inherent challenges of knowledge translation and related research; and (2) presenting conceptual links between the theories of two distinct domains – namely, the broaden-and-build theory of positive emotions (B.L. Fredrickson, 2001) and the organisational knowledge creation theory (Nonaka, von Krogh, & Voelpel, 2006). This paper argues for further develop of a framework explicating the link between knowledge translation and positive emotion to help promote the successful translation of knowledge to practice.

KNOWLEDGE TRANSLATION

Although KT represents a contentious term (Greenhalgh & Wieringa, 2011b), it is here understood to refer to 'any activity or process that facilitates the transfer of high-quality evidence from research into effective changes in health policy, clinical practice, or products' (Lang, Wyer, & Haynes, 2007, p. 355). Translation – as opposed to utilisation, implementation, dissemination, or diffusion (Graham et al., 2006) – is deemed appropriate because much gets 'lost in translation' (Allen, 2014; Butler, 2007; Desborough, Parker, & Forrest, 2013; Graham et al., 2006; Lenfant,

2003; Pugh & Vetere, 2009); furthermore, this is for sound reason (Wieringa & Greenhalgh, 2015).

As a term and concept, KT is contentious for epistemological and methodological reasons (Wieringa & Greenhalgh, 2015). The metaphor of "translating" knowledge has been criticised as it implies a Cartesian conceptualisation of knowledge as information to be transmitted, or sets of external facts waiting to be moved or translated from one place/person to another (Gabbay & Le May, 2011). This linear view of knowledge belies the multi-directional, fluid and "self-organising" (Wieringa & Greenhalgh, 2015, p.8) aspects involved in the dissemination of knowledge. It also diminishes a tacit, embodied aspect of knowledge, that which is unable to be articulated, and involves the senses, physical movement and intuition (Nonaka & von Krogh, 2009; Polanyi, 1966). Including tacit knowledge in a conceptualisation of knowledge is important because tacit knowledge is necessary for many practices, from inherent physical functioning to the insights or inspiration needed for an act of creativity (Polanyi, 1966).

Methodologically, KT has traditionally focused on better availability of 'evidence' by attempting to provide it explicitly in accessible forms (Barrwick et al, 2009). But this focus overlooks the interaction between individuals and explicit knowledge, once it is made accessible in the form of a clinical guideline or memo. Alternatively, Weiringa and Greenhalgh (2015) note a need to focus on the embodied nature of tacit knowledge and the interactive processes of knowledge creation, rather than merely explicit knowledge. This new paradigm questions the dominant hierarchy of evidence that permeates clinical and implementation research (that is, randomised control trials at top, anecdotal evidence at bottom). Also, some theorists have argued that knowledge has a situated and context dependant nature (Nonaka, Toyama, & Konno, 2000; Polanyi, 1966), which contravenes a positivist, objective view of knowledge as "scientific facts" that exist in a vacuum. This situated nature of knowledge holds not only in the 'soft' social sciences but also in the 'hard' sciences of clinical trials (Greenhalgh & Wieringa, 2011a). Rather than being driven by some objective or "self-evident" priority, individuals and social groups set research agendas via their commitments, motivations and judgements.

The aforesaid factors highlight the complexity and inherent challenges associated with knowledge translation and related research, which has yet to be sufficiently addressed in the literature. However there has been significant theoretical work supporting a multi-directional conceptualisation of knowledge, which accounts for the complexities of KT processes described above. Notable of which is Nonaka's theory of organisational knowledge creation.

ORGANISATIONAL KNOWLEDGE CREATION THEORY

Organisational knowledge creation theory considers how formal codified knowledge is made tacit and disseminated among organisational members through observation and discussion, thereby becoming meaningful and applicable in practice (Wieringa & Greenhalgh, 2015). It is a valuable theory to draw from when considering knowledge translation because it conceptualises knowledge as situated, multi-directional, constantly being re-created, and accounts for both tacit and explicit knowledge. The organisational knowledge creation theory has been largely used to identify conditions enabling knowledge creation in order to improve innovation and learning in organisation (Nonaka, 1994; Nonaka & Takeuchi, 1995; Von Krogh, Ichijo, & Nonaka, 2000).

Of particular relevance to this paper is the way the organisational knowledge creation theory defines and understands knowledge. Knowledge is perceived to be: 'justified true belief'; created within social interaction; context-specific; and enacted through problem definition and solution. It is said to exist on a continuum, fluctuating in form between explicit and tacit. Tacit knowledge is embodied, tied to physiology, the senses and motor functioning, as well as to the relative history of physical movement in the world (Varela, 1992). Tacit knowledge is automatic, non-directed, and non-intentional (Reber, 1993) and cannot be represented accurately in language models or guidelines. Conversely, explicit knowledge involves cognitive processes that are flexible, controlled, and intentional. It is externalised in organisational contexts via guidelines and other forms and is thereby justified in relation to those involved with the organisation. Knowledge is said to oscillate between the two ends of the continuum via knowledge conversion, a process that ensures explicit and tacit knowledge are mutually enhancing to create new knowledge (Nonaka & von Krogh, 2009). The creation and use of knowledge occurs simultaneously and cannot be separated (Osono, 2006); furthermore, it is socially dynamic as interactions lead to 'new' knowledge.

Four processes are said to enact mutual enhancement. These include socialisation, externalisation, combination, and internalisation (SECI). The articulation of knowledge through socialisation involves experimenting with concepts, words, and linguistic relationships, which helps to make meaning and convey meaning to others (Nonaka & von Krogh, 2009). Tacit knowledge is transformed and enriched when it gradually assumes an explicit form or is externalised. Explicit knowledge can be combined or converted from explicit knowledge to more complex forms of explicit knowledge to disseminate. This may occur, for example, in the collecting and collation of multiple forms of data to create a financial report. Explicit knowledge loses its 'explicitness' when it is internalised and acted on – for example, when translating clinical guidelines into consumer care. These processes help to create knowledge within organisations and form a theoretical base to account for much of the complexity and dynamism involved.

Despite the value of the organisational knowledge creation theory and its relevance to KT, there has been limited connection between this theory and the concept of positive emotion. Although Nonaka and von Krogh (2009) concede that tacit knowledge is rooted in emotion, there is little discussion on the role emotion plays in knowledge conversion. This suggests emotional responses play a limited part in the creation or management of knowledge. However, this is juxtaposed by a growing body of research that highlights the role of positive emotion in creative problem solving (A. M. Isen et al., 1987; Lam et al., 2014; Parke et al., 2015; Rego et al., 2014).

POSITIVE EMOTION

Emotions are short-lived experiences that produce co-ordinated changes in people's thoughts, actions and physiological responses (B. L. Fredrickson, 2001; Fredrickson & Branigan, 2005). These changes have been explained as specific action tendencies (Fredrickson & Branigan, 2005; Frijda, 1986), which prompt mind and body to coalesce, narrowing the available urges to action. Emotions such as fear, anger and disgust for example are linked respectively to the urges to escape, attack and expel (B. L. Fredrickson, 2001). The narrowing of action tendencies ensures responses appropriate to stimulus and have been explained as an evolutionary adaption necessary for survival (Tooby & Cosmides, 1990). Fredickson and colleagues argue however that positive emotions do not conform to the specific action tendencies

construct, noting that the urges to act linked with positive emotions are far too vague to be specific (joy linked with aimless activation, interest linked with attending, etc. (Frijda, 1986)) Rather, positive emotions *broaden* available action tendencies, prompting a wider range of thoughts and actions, inspiring creativity and innovation (B. L. Fredrickson, 2001). Not only do positive emotions broaden though action tendencies, but they are more lasting than transient emotional states and cause the accrual of personal resources to be drawn upon in different emotional states (B.L. Fredrickson, 2001). Positive emotions are relevant to evidence based practice because they have the potential to enhance cognitive ability, memory management and creativity and provide a vehicle for both individual growth and social connection (B. L. Fredrickson, 2001). By broadening the scope for attention and thinking, positive emotion can be a valuable asset when exploring how best to translate knowledge to practice.

In addition to Fredrickson's work arguing for the benefit of positive emotion for cognitive processes, there is considerable research on the role of emotion in knowledge creation (Forgas & Smith, 2007). Emotion influences the way people interpret, judge, and respond to social information. Emotion can influence how information is accessed, processed, and managed (A. Isen, 2008). It plays an important role in mental representation of uncommon experiences among participants (Forgas & Smith, 2007) and people often process mood-congruent material more deeply, with greater associative elaboration and, thus, learn it better (Forgas & Bower, 1987). If knowledge, either explicit or tacit, is perceived as emotionally positive, it is likely to be retained in memory, within the individual and (relatedly) the organisation. However, little work has been done exploring these connections in the context of organisational knowledge creation and management and more work is needed exploring the judgmental and behavioural consequences of emotion (Forgas & Smith, 2007).

DISCUSSION

KT research and practice is yet to resolve the myriad challenges and provide a sound theoretical and empirical foundation supporting consistent knowledge to practice success. It is therefore important to further explore how knowledge is best generated, shared and applied in the hope of addressing these challenges. This paper puts forth a case for further study on the influence of positive emotion on KT in the hope of continued study and development of a theoretical framework making explicit the connection between Fredrickson's broad and build theory of positive emotion and Nonaka's theory of organisational knowledge creation. Development of a framework highlighting the role of positive emotion has the potential to be significantly beneficial for KT research and practice. KT methods that involve a positive emotional element – arguably many arts-based KT methods – would become increasingly valuable in light of this theoretical integration.

Examining positive emotions in relation to KT requires methods that enable reflexivity and investigation of in situ practices. Participatory and ethnographic methods would be perfectly placed to obtain insight into brilliance in HC settings as it is from the point of view of the clinicians themselves and enables opportunity for reflexion (Iedema, Mesman, & Carroll, 2013). Video reflexive ethnography (VRE) would be an apt method to employ as it emphasises and operationalises practitioner knowledge, proficiency, and insight into the dynamics of their own work processes (Iedema, 2009; Iedema, Long, Forsyth, & Lee, 2006). Important in this approach is ability for co-researchers to have a reflexive space to facilitate revising and revisiting

processes and practices, connecting 'what we do' to 'who we are' (Iedema & Carroll, 2011).. This reflexivity inherent in the research process would in turn shed light on where positive emotions occur in an organisation and how these emotion broaden though action tendencies to facilitate better reception and re-creation of knowledge.

CONCLUSION

This paper has engaged with theory pertaining to both knowledge translation and management and to the influence of positive emotion on cognition with the aim of exploring a conceptual link between the two literatures. Evidence based practice is yet to be fully realised in the context of health care settings, but with effort applied to innovative theories and research we will be well placed to better understand how knowledge is shared within organisations (Wieringa & Greenhalgh, 2015). The potential influence of positive emotion on KT is an area in need of attention as implications for both KT research and practice are vital to advancing evidence-based practice.

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