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Title: Exploring conceptualisations of knowledge translation, transfer and exchange across public health in one UK region: a qualitative mapping study

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ABSTRACT

Objectives: Knowledge translation (KT) is becoming common vocabulary, but as a concept it is not clearly defined. Many related terms exist; these are often used interchangeably and given multiple interpretations. While there is a growing body of literature exploring these concepts, using it to inform public health practice, strategy, research and education is challenging given the range of sources and need for local 'contextual fit'. This study explores how various public health stakeholders make sense of, and experience, KT and related concepts.

Study design: A qualitative mapping study using a phenomenographic approach.

Methods: Thirty-four academics, students and practitioners working in public health across the north east of England participated in six focus groups and five one-to-one interviews.

Discussions were audio-recorded, transcribed and analysed using a thematic framework approach. The framework drew on findings from reviews of the existing literature, whilst allowing unanticipated issues to emerge.

Results: Three main themes were identified from the stakeholder discussions:

- (i) *Definitions:* There was some agreement in terms of meanings and interpretations of core concepts relating to KT, although stakeholders spoke of the differing 'languages' across disciplines and sectors
- (ii) *Process issues:* Access to funding, targeted messages, the nature of the evidence base, and wider contextual factors were identified as barriers or facilitators to KT
- (iii) *People:* Various KT roles and responsibilities were highlighted for the different stakeholder groups

Conclusions: This study has enabled further development of theoretical understandings of the KT discourses at play in public health, and identified the ways in which these may be bound by discipline and context. Ironically, the findings suggest that terms such as knowledge translation, transfer and exchange are seen as themselves requiring translation, or at least debate and discussion.

Keywords: knowledge translation, knowledge exchange, knowledge transfer, evidence-based practice, qualitative research

INTRODUCTION

Evidence-based medicine is defined as “the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients”¹, where ‘best evidence’ tends to equate with published research findings. The rise of evidence-based medicine was prompted by wide variations in clinical practice, poor uptake of effective therapies, and persistent use of ineffective technologies.² Similar patterns have been observed in other fields, including social care, education and public health. The assumption is that closing the research-practice gap leads to more effective policy and practice, both in terms of cost and clinical outcomes.³ However, it is estimated that securing evidence uptake may take up to 10 years, if it occurs at all.^{4,5} Furthermore, it is now recognised that getting evidence into, or indeed out of, policy and practice is not a straightforward or linear process and to view it as such may be misleading.⁶⁻⁹

The Cooksey review⁴ of publicly-funded health research in the UK highlighted two key gaps: in translating ideas from research into new products and approaches; and putting those products and approaches into practice. The term ‘knowledge translation’ (KT) is increasingly used to describe the work required to close or bridge these gaps.¹⁰⁻¹⁵ KT is becoming common vocabulary, but it is not clearly defined nor are there agreed meanings in many areas of health and social care. The core issue involves the multiple interpretations, paradigm perspectives and discourses that exist across a range of contexts.¹⁶ These perspectives range from a linear bench-to-bedside view to a focus on co-creation and the organic complexity of systems.^{8, 14, 17} A multitude of related terms exist and are often used interchangeably; for example, knowledge transfer, knowledge exchange, knowledge mobilisation and knowledge management.¹⁸ While there is a growing body of literature exploring these concepts, using it to inform public health

practice, strategy, research and education is often difficult given the range of sources, worldviews upon which they are based and need for local 'contextual fit'.

The north east of England provides the context for the study reported here. Levels of health and deprivation in the region are among the worst in the UK, with the lowest life expectancy in England and the highest rates of binge drinking, adult smoking and early deaths from cancer.¹⁹ Enhanced approaches to knowledge development and implementation are crucial in understanding and tackling local issues. Funded by Fuse (a UKCRC Centre for Translational Research in Public Health), this study was undertaken to map and explore the ways in which different public health stakeholder groups make sense of, and experience, KT in practice.

METHODS

Drawing on a phenomenographic approach, a qualitative concept mapping exercise was carried out to address the study aim. Concept mapping is a useful strategy in qualitative inquiry, allowing researchers to surface participants' meaning, whilst also exploring the connections that participants identify and discuss across concepts or bodies of knowledge.²⁰ Furthermore, concept maps help to ensure that qualitative data is embedded in a particular context.²¹ Phenomenography is an empirical research tradition focusing on describing, exploring and comparing the conceptions people hold.^{22, 23} It investigates "the qualitatively different ways in which people understand a particular phenomenon or an aspect of the world around them" (p.335).²⁴ It is concerned with the relationships people have with the world, in recognition that different people will not experience a given phenomenon or aspect of reality in the same way. In the context of this study, phenomenography has been used to explore and define the different ways in which people experience, perceive, understand, interpret and conceptualise the phenomenon of KT.

Sampling and recruitment

The Fuse centre administrator distributed study information to Fuse mailing lists incorporating over 400 individuals working, studying or volunteering in the field of public health within various agencies and sectors across the north east. The email emphasised that participation was voluntary and invited people to 'opt in' by reply. Respondents were asked to circulate the study information to relevant others. The concept of organisational, academic and practice knowledge contexts was used to organise respondents into stakeholder groups.^{25, 26} Fifty-two individuals expressed interest and 34 consented to take part in the study, including 15 academic staff, 14 PhD students / early career researchers (ECRs), and five people working in public health practice in the public, private or voluntary sectors.

Data collection

Focus groups were chosen as the main mode of data collection, allowing several perspectives to be collected and enabling participants to question each other, as well as evaluating and re-considering their own understandings.^{27, 28} In line with a phenomenographic approach, the topic guide (developed from reviews of the existing literature) included prompts to elicit understandings and experiences of KT (Box 1). Six focus groups were conducted; each took place within a suitable academic venue and lasted approximately one hour. The option of a one-to-one interview was offered to those unable to attend a focus group. Five semi-structured interviews were conducted – two in person and three by telephone. The discussions were audio-recorded and transcribed verbatim.

Box 1: Stakeholder definitions of KT/E

- Knowledge transfer

I see all of them [knowledge transfer, exchange and translation] as essentially about the transfer of information from different experts. So, for example, between health academics and community staff and community participants and so on. [...] So that we are able to pass back our experience – and the understanding of the experiences of our clients and volunteers – so we can pass that back to academics to inform future research. (Pr1)

- Knowledge exchange

It's about a two-way process of exchanging knowledge, skills, experience, expertise, evidence, research, understanding, about what works and what makes a difference. [...] And building bridges in a way that accepts that there are knowledge and skills and expertise not just in universities. (Ac14)

- Knowledge translation

The translation bit, for me, is the fact that in that movement it actually changes in some way. So it's adapted to the new environment. [...] That's my understanding of translation – that when the knowledge moves across boundaries it actually changes in some way to adapt to the new context. (Ac3)

Ethics

Ethical approval was received from Northumbria University Research Ethics Panel. NHS ethics and research governance approval was not required. Personal details were kept confidential and data protection procedures were adhered to in line with best practice. All participants gave written informed consent to take part in the study.

Data analysis

Iterations of sampling, data collection and analysis aimed to identify qualitatively distinct categories describing how individuals and groups experience, interpret and conceptualise KT. Through the production of visual concept maps, these categories were refined, challenged and consolidated into themes which were then used (by SV and AS, independently) to re-analyse the transcripts using thematic framework analysis.²⁹ This approach is consistent with phenomenography, where the purpose of data analysis is to identify the limited number of categories believed to be possible for each concept under study.^{24, 30} The researcher looks for both similarities and differences within the data, develops initial categories that describe different people's experiences and the overall meanings they give to the phenomenon, and then returns to the transcripts in order to populate and refine the categories. In the present study, this entailed: familiarisation with the raw data (by both researchers); descriptive 'chunking' of interpretations, experiences and meanings; identification of conceptualisations; and comparisons across participants, stakeholder groups and framework areas. The process continued until all categories appeared consistent with the data and a series of themes were developed. During the analysis phase, the research team met on a regular basis to discuss, challenge and confirm emerging findings arrived at independently. In addition, the themes were presented to a wider group of academic and practitioner colleagues for further questioning, thus enhancing the trustworthiness of the findings.³¹

RESULTS

Three main themes emerged from the focus group and interview data: definitions and conceptualisations; process issues; and roles and responsibilities.

Definitions and conceptualisations

Participants were asked to define and offer examples of the terms knowledge transfer, knowledge exchange and knowledge translation in action (Box 2). Subtle differences in interpretation and language emerged across the stakeholder groups.

Box 2: Process issues relating to KT/E

- Funding

I think that there are particular academic barriers to start with. I think we can name REF [the Research Excellence Framework], we can name institutional competition because of the funding, you know. There is no such thing as a true collaborative bid. There's always got to be a lead institution. (Ac2)

- Targeted messages

If you're working in a University environment, you need to get a [research] paper out of it, you need to get... You know, you need to see the big picture. Whereas often, what people want from local bits of research isn't the big picture. They want to know what's going to work in their community. And that's quite hard, to balance those two priorities. (Ac10)

- The nature of the evidence base

Sometimes you're directed to documents or pieces of research occasionally within your work, from your colleagues and your managers, but then you aren't... You aren't enabled to have that time to actually spend time reading those articles and getting familiar with that information. Or even having conversations about that information – which would be really useful – because you're too busy focusing on doing the day-to-day thing. (Pr3)

- The wider context

There's a real danger in this period of transition that things will get lost off. Systems will go. People won't be in the same place. They'll lose a lot of the stuff around the evidence and how we know what works, because a lot of it is not in the public domain, necessarily. (Ac8)

Knowledge transfer

The predominant view was that knowledge transfer concerns the movement of information from one (conceptual) place to another. Although the direction of movement was generally felt to be one-way – in terms of “applying the results from research into reality” (Ac1) – practitioners also saw movement as being possible in both directions, i.e. from practice to academia. In this sense, knowledge transfer was seen as an ongoing process rather than a one-off event, involving the “transfer of information from different experts” (Pr1) over the duration of a programme of work.

Knowledge exchange

Knowledge exchange was also described as a passive, one-dimensional process involving the movement of information between individuals or organisations. Participants gave examples of knowledge exchange taking place within teams or professions, between those who “speak the same language and are at the same level of knowledge” (St2). This involved two-way exchange or information-sharing and, as such, was perceived as less top-down than knowledge transfer.

Knowledge translation

Participants experienced greater difficulty in articulating their understandings of knowledge translation; this did not seem to be a familiar concept to some, who tended to favour alternatives such as co-production. Unlike the other terms, knowledge translation was described as an active, multi-dimensional activity consisting of three overlapping elements: sense-making, transformation and application. The purpose of the sense-making stage was reportedly to reach a level of understanding and consensus, by rendering knowledge into

something meaningful and useful to all stakeholders. The second stage involved the generation of new knowledge and understanding through the process of translation. The final stage was described as: “Getting information from whatever source, in such a format that you can then use it, in some way, shape or form, to make a change” (Ac10). Involving practitioners and communities in conversations about research was perceived to facilitate the implementation process, whilst acknowledging the role of academics in offering expertise and providing essential “academic grounding” (Pr2).

Process issues

In describing their experiences of knowledge transfer, exchange or translation (abbreviated as KT/E), participants identified a number of barriers, enablers and incentives (Box 3).

Access to funding

The availability of research funding was identified as a key incentive to engage in KT/E: “The people who hold the purse strings are very often the drivers of whatever is happening” (Ac14). The way academic research is funded and incentivised was seen as creating barriers to KT/E, yet a lack of funding can paradoxically act as a driver for collaborative working with those outside academia. Participants identified the current economic climate as a potential driver for achieving greater efficiency and quality in research. The increasing emphasis on KT/E was described as a “sign of the times”, where “if [research] isn’t useful to anybody, then nobody is going to fund it” (St3).

Targeted messages

A major challenge for those attempting KT/E was the difficulty of “trying to get the right message to the right people” (Ac1), the ‘right message’ being one which is relevant within a given context and likely to have a positive impact. Participants suggested that academics may experience difficulties in constructing these messages without input from others, while a culture of knowledge-sharing was not felt to exist in public health practice. Academics were perceived – by current and former practitioners – as having the ‘luxury’ of being able to engage in research, whereas practitioners are too busy ‘doing’ public health.

The nature of the evidence base

The research evidence base was described as extensive and in constant flux, making it difficult for practitioners to keep up-to-date with developments. These difficulties were compounded by limited time and competing priorities. There was a strong preference for open access publishing and mechanisms such as table of contents alerts, where relevant research is delivered to practitioners with minimal time or cost implications. Students and ECRs raised concerns regarding the lack of a forum to disseminate findings from small-scale pieces of research. The need for academics to publish in peer-reviewed journals was highlighted as disincentivising alternative forms of dissemination.

The wider context

Many factors impinging on a ‘knowledge trajectory’ were felt to be outside of an individual’s control and range from the national policy context to local organisational constraints. In general, there was felt to be little strategic push for KT/E and most examples could be described as bottom-up rather than top-down. Reorganisation of the English National Health

Service (NHS) and changes in local government were viewed as significant threats to existing partnerships and relationships that enable KT/E. However, there was a minority view that NHS reorganisation might provide an opportunity to form new partnerships and try different ways of working in an effort to enhance efficiency.

Roles and responsibilities

Various stakeholders were identified as having different roles to play in generating, communicating or applying knowledge to improve health. Ultimately, KT/E was perceived as a shared responsibility.

Practitioners

Practitioners were felt to have an important role in applying evidence to 'real life' settings. However, they were unlikely to label this activity KT/E, and instead described themselves as working in collaboration to achieve health improvement. Frustration was expressed at academic research not always being translated into practice. In general, academics were perceived as responsible for resolving this situation, but it was acknowledged that services have a responsibility to remain flexible and open to changing their practice. Some practitioners could be described as KT/E champions, often engaging in these activities informally at an individual level. This required knowledge of both practice and academia, for example, through part-time postgraduate study.

Students and early career researchers

In general, students and ECRs did not see themselves as engaging in KT/E, largely because they perceived no push for this from supervisors. Their primary concerns were completing a doctorate and producing publications to advance their careers. Although keen to impact on policy and practice, ECRs generally felt their research was too small-scale to be 'worthy' of formal KT/E activity.

Academics

Co-production of knowledge was consistently seen as the ideal; in reality, KT/E processes were reportedly driven by academics as 'producers' of knowledge, with practitioners, policy-makers and the public as knowledge 'consumers'. Thus, KT/E processes were perceived as guided by an academic agenda, rather than occurring collaboratively or organically. This situation was not always seen as problematic. Practitioners generally felt it was valuable to have a degree of academic involvement to generate new findings or add credibility to their work.

DISCUSSION

This study was designed around the assumption that multiple understandings of KT/E would emerge across different public health stakeholder groups (i.e. practitioners, academics and students). However, there was some agreement concerning the properties of the core concepts, as well as the drivers and barriers to KT/E processes. Knowledge transfer, for example, was almost universally described as a linear process involving the one-way movement of information that is not modified during transfer. This suggests a top-down approach, involving movement from academia (the site of knowledge production) to practice (site of knowledge consumption). Practitioners were less likely to see this as negative and

more likely to employ fluid definitions of the core terms. This is supported by McAneney et al.³², who found that academics and non-academics have different expectations of KT/E and different levels of confidence in the potential impact on public health.

Knowledge exchange was described by participants as involving two-way movement of information between or within groups; essentially, a dialogue between knowledge producers and consumers speaking the same (professional) language. Participants spoke about academic knowledge as a fixed commodity which can be exchanged or transferred, reflecting a common and enduring view of KT/E as predominantly about getting research into practice.^{9, 33, 34} KT/E processes were described as driven by an academic agenda, but the importance of involving end-users was also emphasised in order to ensure that research is relevant and usable in real-world settings. Other authors have reached similar conclusions.³⁵⁻³⁷ However, the act of researching, collating and exchanging knowledge is a way of gaining or preserving power by different groups. The present study found that the ability of some stakeholders to engage in KT/E is constrained by a range of factors, particularly conflicting priorities, lack of funding and a limited culture of knowledge-sharing.

Knowledge translation was invariably described as a more complex, multi-dimensional activity than knowledge transfer or exchange, involving blurring of the boundaries between knowledge producers and consumers. It was described as the process of making sense of and then transforming knowledge in order to render it useful to another party. There is a high degree of overlap between this conceptualisation of the KT process and the themes identified in previous reviews. Central to this conceptualisation are assumptions that:

- Different stakeholder groups speak different languages (hence, a need exists for translation); and

- The purpose of the translation process is to render ‘understandable’ the idea or knowledge that moves between groups

These assumptions are reflected in much of the KT/E literature.^{9, 34, 38} In addition, the language and terms used to talk about KT/E processes are often referred to as confusing, blurred and overlapping, and a lack of consensus remains on their meanings and properties.³⁸⁻⁴²

A focus on language widens the discussion of these concepts beyond a simple dichotomisation of academic and non-academic understandings to encompass underlying issues of discourse and power.⁴³ Questions are raised regarding what is meant by ‘knowledge’ and who creates or owns ‘it’. In fields such as the social sciences and education, multiple forms of knowledge (i.e. tacit, organisational, experiential) are recognised and valued.^{25, 33, 34, 44-46} This view is steadily surfacing in relation to KT/E, with ideas about co-creation and co-construction of knowledge and a shift towards cyclical frameworks.^{6, 33} In contrast, the empirical data presented here suggest that a ‘scientific’ view of knowledge in KT/E still predominates within public health, highlighting a gap between published discourse and practice. However, there was a general consensus that knowledge translation is an important goal that all stakeholders should take responsibility for and work towards. These findings are congruent with the ‘integrated knowledge translation’ conceptual framework developed by Lapaige⁴⁷, suggesting that KT is both a process and an outcome resulting from dynamic collaboration between practitioners and researchers.

Limitations

This study was confined to a specific UK region, thereby limiting the transferability of the findings to other areas. Despite attempts to enhance recruitment from non-academic organisations, the final number of current practitioners was five from a total of 34 participants. There were no commissioners, policy-makers or local government staff, where different forms of knowledge might be acknowledged and valued. This may reflect the study taking place at a time of significant change across the health system, as well as indicating uncertainty about the meaning and relevance of KT/E for these groups. Furthermore, it is not always possible or desirable to separate public health stakeholders into discrete categories. Several participants categorised as 'academics' or 'students' had spent many years working in public health practice, while others categorised as 'practitioners' were also part-time students. Therefore, these individuals spoke with some credibility about the intersection between academic and practitioner understandings of issues related to KT/E.

CONCLUSIONS

Knowledge translation, transfer and exchange have become common vocabulary across public health and are perceived as key mechanisms for improving both service efficiency and population health. Within the literature, there remain multiple understandings of what these concepts mean. The empirical findings of this study indicate some level of consistency of interpretation amongst those working across academic public health in the north east of England. Given the limitations of the study sample, it is not possible to make such definitive statements with regard to other groups, including public health commissioners or policy-makers. However, the findings point to diverse KT/E discourses at play. A key theme from the study concerns the role of language both within the processes of KT/E and in talking about the

processes and concepts. Ironically, the findings suggest that the terms knowledge translation, transfer and exchange are seen as themselves requiring translation. While the 'acts' involved in KT/E need to be supported and encouraged irrespective of the labels they are given, further debate and discussion is needed to clarify meanings and explore the role of language across the public health landscape. In particular, there is a need for research exploring the experiences and understandings of those working at a strategic level in public health.

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Competing interests

None declared

Ethical approval

Northumbria University

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TABLES AND BOXES

Box 1: Topic guide

- **Definitions (language) of knowledge translation, transfer and exchange**
 - Informal or formal / personal or institutional
 - Related concepts and terms
 - Crossover between concepts, similarities and differences

- **Awareness of strategy relating to KT**
 - Global, national, local, organisational, departmental
 - Policy and other drivers

- **How KT works in practice within their (and other) organisations**
 - Description of the process(es)
 - Concrete examples, vignettes

- **Who is involved in delivering and/or managing KT**
 - Specific roles and responsibilities
 - Levels of involvement within organisations
 - Their involvement (as an academic/student/policy-maker/practitioner)

- **Any other issues relating to KT**
 - Perceived benefits / strengths
 - Limitations
 - Areas of confusion or concern
 - Suggestions, ideas

Box 2: Stakeholder definitions of KT/E

- Knowledge transfer

I see all of them [knowledge transfer, exchange and translation] as essentially about the transfer of information from different experts. So, for example, between health academics and community staff and community participants and so on. [...] So that we are able to pass back our experience – and the understanding of the experiences of our clients and volunteers – so we can pass that back to academics to inform future research. (Pr1)

- Knowledge exchange

It's about a two-way process of exchanging knowledge, skills, experience, expertise, evidence, research, understanding, about what works and what makes a difference. [...] And building bridges in a way that accepts that there are knowledge and skills and expertise not just in universities. (Ac14)

- Knowledge translation

The translation bit, for me, is the fact that in that movement it actually changes in some way. So it's adapted to the new environment. [...] That's my understanding of translation – that when the knowledge moves across boundaries it actually changes in some way to adapt to the new context. (Ac3)

Box 3: Process issues relating to KT/E

- Funding

I think that there are particular academic barriers to start with. I think we can name REF [the Research Excellence Framework], we can name institutional competition because of the funding, you know. There is no such thing as a true collaborative bid. There's always got to be a lead institution. (Ac2)

- Targeted messages

If you're working in a University environment, you need to get a [research] paper out of it, you need to get... You know, you need to see the big picture. Whereas often, what people want from local bits of research isn't the big picture. They want to know what's going to work in their community. And that's quite hard, to balance those two priorities. (Ac10)

- The nature of the evidence base

Sometimes you're directed to documents or pieces of research occasionally within your work, from your colleagues and your managers, but then you aren't... You aren't enabled to have that time to actually spend time reading those articles and getting familiar with that information. Or even having conversations about that information – which would be really useful – because you're too busy focusing on doing the day-to-day thing. (Pr3)

- The wider context

There's a real danger in this period of transition that things will get lost off. Systems will go. People won't be in the same place. They'll lose a lot of the stuff around the evidence and how we know what works, because a lot of it is not in the public domain, necessarily. (Ac8)