INTEGRATIVE LITERATURE REVIEWS AND META-ANALYSES

Clarifying the concepts in knowledge transfer: a literature review

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Clarifying the concepts in knowledge transfer: a literature review

Aim. The aim of this paper is to examine the concepts of opinion leaders, facilitators, champions, linking agents and change agents as described in health, education and management literature in order to determine the conceptual underpinnings of each.

Background. The knowledge utilization and diffusion of innovation literature encompasses many different disciplines, from management to education to nursing. Due to the involvement of multiple specialties, concepts are often borrowed or used interchangeably and may lack standard definition. This contributes to confusion and ambiguity in the exactness of concepts.

Methods. A critical analysis of the literature was undertaken of the concepts opinion leaders, facilitators, champions, linking agents and change agents. A literature search using the concepts as keywords was conducted using Medline, CINAHL, Proquest and ERIC from 1990 to March 2003. All papers that gave sufficient detail describing the various concepts were included in the review. Several ‘older’ papers were included as they were identified as seminal work or were frequently cited by other authors. In addition, reference lists were reviewed to identify books seen by authors as essential to the field.

Findings. Two similarities cut across each of the five roles: the underlying assumption that increasing the availability of knowledge will lead to behaviour change, and that in essence each role is a form of change agent. There are, however, many differences that suggest that these concepts are conceptually unique.

Conclusions. There is inconsistency in the use of the various terms, and this has implications for comparisons of intervention studies within the knowledge diffusion literature. From these comparisons, we concluded that considerable confusion and overlap continues to exist and these concepts may indeed be similar phenomena with different labels. All concepts appear to be based on the premise that interpersonal contact improves the likelihood of behavioural change when introducing new innovations into the health sector.

Keywords: concept clarification, health care, knowledge diffusion, knowledge transfer, knowledge utilization, literature review

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Introduction

The knowledge diffusion literature encompasses many different disciplines from management to education to nursing. Due to the involvement of multiple specialties, concepts are often borrowed or used interchangeably and, as a result, may lack standard definition. This contributes to confusion and ambiguity in the exactness of definitions of the concepts. Using poorly differentiated concepts in research contributes to questionable reliability and validity, as well as misunderstanding in the communication of research findings (Morse et al. 1996).

Background

The discipline of nursing has not been silent on the issue of knowledge diffusion, defined as the process of communicating research, innovations and/or knowledge to individuals, groups or organizations (Estabrooks 2001; Rogers, 1995). Indeed, much debate has occurred within the discipline around means to improve the diffusion, dissemination and utilization of research knowledge in clinical practice. Implementing research knowledge in nursing practice has traditionally focused on models that emerged from large-scale initiatives in the 1970s, such as the Conduct and Utilization of Research in Nursing (CURN) project, the Stetler/Marram model, and the Iowa Model of Research in Practice. These models often espoused the view that research findings moved from the researcher to the user through a linking relationship. This view stems from a ‘barriers paradigm’ that identifies that an important gap exists between researchers and practitioners, and from a view that the individual characteristics of nurses direct the uptake and use of research in practice.

Discussion of how best to facilitate the use of research knowledge in practice is not limited to the discipline of nursing. Considerable debate has also occurred within the medical, management and education literature. However, the multidisciplinary nature of the knowledge diffusion literature has lead to an influx of terms used to describe the roles of intermediaries and influentials. These roles have emerged from the recognition that passive diffusion simply is not enough to guarantee their adoption into practice. In his review, examining the passive dissemination of consensus recommendations, Lomas (1991) concluded that this approach alone resulted in little or no healthcare provider behavioural change. Rich (1979) clearly re-iterated this by stating: ‘merely because information was timely, relevant, objective, and disseminated to the right people in usable form did not guarantee its use’ (p. 20). One of the earliest works, the Iowa hybrid corn seed study conducted by Ryan and Gross (1943), identified that the diffusion of an innovation is essentially a social process. This has lead to the belief that interpersonal contact may play a pivotal role in knowledge diffusion and utilization. Backer (1991) identified six critical strategies for knowledge utilization, of which interpersonal contact, outside consultation, and the development of champions are described (in Backer 1991). One of the strategies that has been shown to be fairly effective in improving the diffusion and implementation of research in practice has been the use of influential people or a group of experts. Several authors have conducted systematic reviews to examine the effectiveness of interventions to improve the uptake of research into practice (Bero et al., 1998; Oxman et al. 1995, Thomson O’Brien et al. 2000, Grimshaw et al. 2001). The paper by Grimshaw et al. (2001) identified 41 systematic reviews, 15 of which focused on the effectiveness of specific interventions including the use of opinion leaders. They concluded that when opinion leaders were used there was variable effectiveness in achieving the desired behaviour change in healthcare providers (Grimshaw et al. 2001). Similarly, Oxman et al. (1995) and the Cochrane Review by Thomson O’Brien et al. (2000) found that interventions using opinion leaders tended to be moderately successful.

Overall, intervention studies have generally used experts to provide education, champion a cause or product, or to give support to staff around the diffusion and implementation of a clinical practice guideline, protocol or research evidence. Unfortunately, reviewing the numerous papers is difficult because of the multiple terms used to describe the ‘expert’ or influential person. The many roles described include opinion leaders, facilitators, champions, linkage agents, and change agents. More recently, the Canadian Health Services Research Foundation (CHSRF) has elaborated yet another role, that of ‘knowledge broker’. A person in this role has been described as an expert who acts as a link between researchers and decision-makers (Gold 2002). The characteristics of knowledge brokers as proposed by Breton et al. (2002) suggested that individuals in this role translate, synthesize and contextualize research for a variety of users; have a wide communication network; have credibility within their own organization and within the larger community; and are involved in linking users and creators of knowledge.

It is unclear, however, if all of these concepts represent distinct roles or rather are similar concepts with different labels. For example, four intervention studies claiming to examine the use of opinion leaders actually differed strongly in their definition of what constituted an opinion leader (Hodnett et al. 1996, Closs et al. 1999, Borbas et al. 2000, Dopson et al. 2001). This lack of conceptual clarity is problematic in that it prevents us conducting direct
comparisons across intervention studies and determining the effectiveness of the interventions. It also leads to confusion and hinders effective communication. As noted by Rogers (2000), ‘clear concepts are necessary to characterize phenomena of interest, to describe situations appropriately, and to communicate effectively’ (p. 80). Clarifying what is meant by these concepts would assist in removing the ambiguity around them and help facilitate cross-study evaluation. Due to the scarcity of research literature on the knowledge broker role, this will not be included in the conceptual analysis but its relevance will be discussed in the Discussion section.

**Aim**

The aim of the literature review discussed below was to clarify the concepts of opinion leader, facilitator, champion, linking agent and change agent, papers from the nursing, managerial, medical and educational literature were analysed.

**Analysis framework**

Concept analysis is the examination and ‘unpacking’ of concepts. In nursing, the predominant methods used to conduct concept analysis are Wilson-derived methods, which allow for the systematic examination of independent concepts (Haase et al. 2000). Since in this paper we are examining five concepts simultaneously and there is a substantial volume of literature about these concepts, a method that was flexible in its approach was required. Therefore, a critical analysis of the literature as described by Morse et al. (1996) was undertaken.

One of the difficulties in conducting a concept analysis using the critical analysis approach is that there are no clearly defined methodological guidelines. The one guideline is that there must be a large database or body of literature on which one can draw for analysis (Morse et al. 1996). Several comprehensive examinations of the literature on knowledge dissemination and utilization have been conducted and have revealed that the knowledge utilization field contains tens of thousands of literature citations (Backer 1991), leading us to the conclusion that there is a large available body of literature for analysis.

**Search methods**

A literature search was conducted on Medline, CINAHL, Proquest and ERIC from 1990 to March 2003 using the concepts as the keyword guiding the search. Papers were restricted to those published in English and were included if they provided adequate detail on how the concept was defined. Several papers were included in the review because they were identified as influential work or appeared to be frequently cited by other authors. In addition, reference lists were reviewed to identify books seen as essential to the field. The sheer volume of publications precluded an exhaustive review. However, all attempts were made to review the chosen databases and key papers thoroughly. Each paper was analysed to determine the attributes of the concept it described. An ideal case was constructed to reflect the explicated attributes. All the concepts were then compared and contrasted to determine their similarities and differences.

**Results**

**Characteristics of the concepts**

The concepts of opinion leader, facilitator, champion, linking agent and change agent are described in the following section. The primary attributes and a model case for each concept are presented. Where possible, when attributes are described, the literature that was reviewed for each concept has been referenced.

**Opinion leader**

*Primary attributes*

The difficulty in arriving at some sense of consensus about the concept of opinion leader essentially arises from the manner in which opinion leaders are identified. For example, in intervention studies using opinion leaders, several authors used a process of peer-nomination to select opinion leaders (Kelly et al. 1991, Seto et al. 1991, Borbas et al. 2000), while others used a sociometric instrument developed by Hiss et al. (1978) or the King and Summers (1970) opinion leadership scale (Lomas et al. 1991, Hodnett et al. 1996, Soumerai et al. 1998, Gifford et al. 1999, Guadagnoli et al. 2000, Lam & Schaubroeck 2000, Berner et al. 2003). Still other researchers have looked to those who appeared to have positions of power, such as chiefs of surgery, heads of state, or school superintendents as being opinion leaders (Williamson et al. 1989, Gist et al. 1997, Howard et al. 2000, Denton et al. 2001, Searle et al. 2002). These suggestions are congruent with the findings of Locock et al. (2001) in that there are two types of opinion leaders: peer and expert. Although there is this difference, when the fundamental attributes of an opinion leader are examined the thread that connects each of these different conceptualizations is that in all cases opinion leaders are seen as credible and having the ability to persuade others.

Opinion leaders are often identified as ‘influentials’, and social influence theory is used to identify why they are able to
wield the influence that they have. Their primary methods of exerting influence are word-of-mouth and face-to-face communication (Venkatraman 1989, Chan & Misra 1990, Cosens et al. 2000, Thomson O’Brien et al. 2000). Opinion leaders are generally respected authoritative sources of information for a group (Mittman et al. 1992). They are considered knowledgeable, trustworthy, accessible and approachable and are willing to share their knowledge. They are identified as a person to whom others go for advice about complex situations, and are thus seen as expert and credible (Locock et al. 2001). Opinion leaders are informally well-connected individuals who have a wide peer and social network (Rogers, 1995). They are not innovators, but rather they evaluate information for its fit with the local situation and try to obtain group consensus (Myers & Robertson 1972, Greer 1988). Most definitions of opinion leaders acknowledge that they are context-specific in that their range of influence does not extend beyond their unit, programme or medical specialty. This relates to the fact that their knowledge is often product- or situation-specific, and it is their knowledge that defines them as influential and expert.

**Ideal case**

The patient care manager of an oncology unit has become aware of a clinical guideline for pain management that she would like implemented on the unit. She seeks out the advice of Emily, a nurse who has worked in oncology for 10 years and who has advanced education in oncology. Emily is the member of many different hospital-wide committees, as well as the staff social planning committee. At meetings, she has been known to question the applicability of new information and to make recommendations that reflect the ideals held by the oncology unit. She is recognized by her peers as key member of the team and is seen as an asset in her work environment. Due to her expert knowledge and experience, her peers see her as a credible source; one they often turn to when they require assistance or answers to clinical questions. She and her unit manager plan several unit meetings where the new guideline is presented and Emily expresses her belief that it represents a best practice that she supports and plans to adopt. Staff members on the unit, because of Emily’s credibility on past projects, are willing to implement and adopt the new pain management guideline in their practice.

**Facilitator**

**Primary attributes**

The use of facilitators has been examined for its potential to influence the knowledge transfer process. Six intervention studies were identified that tested the effectiveness of the facilitator role (Fullard et al. 1987, Cockburn et al. 1992, Dietrich et al. 1992, Crotty et al. 1993, Logan & Davies 1995, McCormack & Wright 2000, Kelly et al. 2002). Many of these used external facilitators who engaged in a specific task-oriented goal: to implement a change in practice. However, it is apparent that the role of facilitator is dynamic and active.

The overarching goal of the facilitator is to assist an individual or group through the process of implementing a change in practice. Burrows (1997) conducted a concept analysis on facilitation and arrived at the following definition: ‘Facilitation is a goal-oriented dynamic process in which participants work together in an atmosphere of genuine mutual respect in order to learn through critical reflection’ (p. 401). This definition shows that the role of a facilitator is to work with groups of people towards change. Indeed, a central characteristic of the role is that it supports a goal-oriented process; it is not prescriptive or directive, but aims to help groups realize their full potential. Facilitators are active and dynamic, concerned with helping, enabling and developing a learning process rather than persuading and telling the group what they should do (Macneil 2001, Harvey et al. 2002). To effect these changes, facilitators must have strong interpersonal, group and communication skills in order to create supportive environments. This requires them to be attuned to the needs of the group and to adjust their style and skill set to meet those needs. The general consensus is that facilitators are appointed and trained for their role (Routhieaux & Higgins 1999). It is a formal rather than informal role and its holder can be either external or internal to the organization (Rycroft-Malone et al. 2002a,b). Often facilitators are outside consultants who are contracted to facilitate group processes such as goal-setting. As such, they are temporary members of the group and are often involved in a time-limited relationship (Kirk & Broussine 2000). However, facilitators who sustain their relationship with the group, and those that align themselves with opinion leaders, may have more success in moving the group towards change (Rogers, 1995). The final key feature of the facilitator role is that it cuts across disciplinary boundaries (Kitson et al. 1998).

**Ideal case**

Ashley, the clinical education nurse for oncology, has been requested by the nurse manager of the Bone Marrow Transplant Unit to meet with the staff nurses about planning for future clinical education sessions. Ashley holds the philosophy that people will be more willing to participate in education sessions if they are geared to what participants want to learn. To assist this process, when the nurses arrive for the meeting, Ashley informs the group that they are
meets with two nurses, Ashley Chang and Emma Wager, who work at the local breast health clinic. They have recently noticed that many of their clients report dissatisfaction with the skin care information they receive during their course of radiation. Often they report discomfort in the irradiated site and express frustration with the support or resources available to them. Emma decides that something must be done for these women and begins looking on the Internet for information. She finds a website that promotes the use of silk underwear for burn patients, and wonders if this might have similar success for patients having radiation therapy. At work, Emma talks to anyone who will listen about her findings. Because of her excitement about this product and its potential to reduce postradiation discomfort, her colleagues and manager are also eager to test it in their clinic. However, there is some reluctance on the part of the radiation oncologists working in the group to support this due to the lack of research evidence for the use of silk. Undeterred, Emma holds informal meetings with the oncologists to address their concerns and contacts the supplier of the silk underwear to provide information and samples for the oncologists. She drafts information sheets to distribute to women in the clinic. Her persistence and passion for the well-being of the women attending the clinic is contagious, and finally the support of all members of the clinic team is won.

**Linking agent**

In the 1970s, Havelock et al. (1971) introduced the idea of ‘linkers’, or the human interface to connect new information and practices to those who could use them. A linking agent works under the premise that practitioners and innovators operate in incompatible worlds and therefore interaction between the two must be achieved through linkage (Havelock et al. 1971, Paul 1977). It is ultimately the linking agent who spans this boundary to bring closer collaboration between the two systems. In this sense, the linking agent works from a problem-solving paradigm; the user has a problem that must be solved and needs to be connected to the appropriate resources (Havelock & Havelock 1973, Crandall 1977). The linking agent is a ‘go between’ who helps bridge the implementation gap by working at all stages of the innovation process. Linking agents can be individuals or agencies at any level in the healthcare system (e.g. local, regional, provincial and federal) (Monahan & Scheirer 1988, Roberts-Gray et al. 1998). Individuals or agencies are trained for this formal role, and most linkers are found in agencies external to the adopters.

Linking agents perform three functions: (a) they direct their actions at the improvement of individual or institutional performance; (b) they use knowledge or knowledge-based...
products and services as key instruments for improvement; and (c) they perform boundary-spanning roles (Culbertson 1977). The primary role, therefore, of a linking agent is making interpersonal contacts and transmitting information from innovators to users. They are, in essence, the communication network between the innovator and user or, in the case of research utilization, between the researcher and the clinical setting or clinician. The authority that linking agents exercise arises from their ability to identify relevant knowledge and their skill in helping others acquire and use this knowledge (Culbertson 1977).

Ideal case
The local cancer agency, Cancer Care Manitoba (CCM), was contacted by the National Cancer Institute of Canada (NCIC) to act as a linking agent in relation to their newly published pain management guidelines. The NCIC asked the local agency if they would be able to inform local cancer units and clinics about the guidelines and to work with them to implement the guidelines. In turn, CCM contacted the key administrators of local units and clinics to inform them of the guideline and to plan times to review it and develop possible implementation strategies with staff.

Change agent
Primary attributes
A change agent requires strong interpersonal and communication skills. They must earn trust and respect and be seen by their clients as ‘expert’. A change agent is involved in a terminal relationship: the main objective is to foster self-reliance in the client system. Indeed, most change agents are involved in projects that have a distinct beginning and end (Havelock & Zlotolow 1995, Rogers 1995). The role may be formal or informal. Change agents can act as a link ‘between the change agency and the client system’ (Rogers, 1995, p. 336). Change agents develop a need for change by helping clients become aware of the need to alter their behaviour. In this sense, change agents already have the innovation chosen for the problem. For example, Niehoff (1966) described the change agent role as that of an external innovator who brings the innovation to the community and then works in conjunction with the group to develop an integration plan. Change agents can also be seen as playing an active role in assisting individuals or groups through the process of change. They work with clients to identify their needs and problems and then to uncover the appropriate innovation to meet those needs (Maclachlan 1986, Hilz 2000). Here sharing new ideas, and giving guidance and encouragement are key behaviours exhibited by change agents in an attempt to influence norms, values and skills (Strunk 1995). Another feature is that some authors identify the change agent as an individual (Tribett 1994, Elser et al. 1996), whereas in other projects such as the Conduct and Utilization of Research in Nursing (CURN) the change agent role was undertaken by a group (e.g. a committee) (Horsley et al. 1978, Scott & Rantz 1994). No matter whether it is an individual or group who undertakes this role, the overarching goal is to assist clients to change their behaviour.

Ideal case
Adam currently is the co-ordinator of nursing education for a local regional health authority. It has come to his attention that new glucose monitoring units are planned in two of the hospitals he oversees for staff education. These new units will need several changes in nurses’ current monitoring behaviour and will require some education sessions. Adam speaks with the managers of the units where the new systems will be implemented to explain the need for education sessions with their nursing staff. The sessions are planned to clarify the new system, with opportunities to practices and ask questions about it.

Discussion
Concept comparison
The essential attributes of each of the concepts of opinion leader, facilitator, champion, linking agent and change agent can be compared along several key dimensions that were identified through the literature review. These dimensions provide a context within which the similarities and differences between the five concepts can be delineated (see Table 1).

Similarities
After conducting the literature review, two defining features were noted across each of the five roles. First, there is the underlying assumption that increasing the availability of knowledge will lead to behaviour change and, secondly, in essence each of the five roles is a form of change agent. These roles have evolved out of the recognition that passive dissemination alone is not effective in increasing the uptake of knowledge and influencing clinician behaviour. People in these roles operate from the premise that interpersonal contact is the key factor in influencing behaviour to improve the use of knowledge in practice (Backer 1991). This belief is based on increased recognition that knowledge diffusion is a communicative and interactive social process (Rogers, 1995).
Due to this belief, most usually a person who is either internal or external to an organization acts in a formal role to promote knowledge utilization. With these perspectives, communication among individuals and the influence of peers have a major influence. The difference between roles is the methods by which their holders achieve this change; that is, through peer or expert influence, persuasion or linking resources.

In order to promote change, specific skills are required, and many of these are similar across the five roles. Strong communication and interpersonal skills are essential to all of them. The form of communication that is most frequently employed across the roles is word- be identified as credible by those with whom they are working. Trust between a client and ‘influential’ is also a central characteristic of each role.

One criticism of these roles is they can often produce change in an unexpected direction by having either a positive or a negative influence on the desired change. For example, over-enthusiastic opinion leaders have ‘turned people off’ (Locock et al. 2001) and have been counterproductive to the desired direction for change. Markham (1998) also questioned the widely held belief that champions have a positive impact on project performance. Based on this assessment, it cannot be assumed that these roles will guarantee change in the desired direction.

Differences

Most of the differences arise from the underlying theoretical perspectives from which they operate. For example, social influence theory underpins the influence that opinion leaders and champions exert. This theory proposes that an individual’s behaviour affects other people’s behaviours and thoughts (Zimbano & Leippe 1991). What this also suggests is that behaviour is guided by habit, custom, group norms and shared social meanings (Mittman et al. 1992). Opinion leaders and champions attempt to influence behaviour by altering current group norms (Cosens et al. 2000).

Communications theory and adherence to the Two Communities Metaphor (Caplan 1979) underpin an understanding of linking and change agents. These models suggest that a gap exists between researchers and users, and that ‘giving greater attention to the relationships between researchers and users at different stages of knowledge production, dissemination and utilization [is important]’ (Landry et al. 2001, p. 335). By bridging the gap between researchers and users, linking and change agents are able to bring relevant knowledge to the attention of clients, thereby improving knowledge dissemination and ultimately affecting client behaviour.

These different theoretical orientations affect how individuals in each role exert their influence to achieve the desired change. Opinion leaders and change agents generally draw upon their level of expertise and knowledge, whereas facilitators use the dynamics of the group and their skills to assist persons to move towards change. Champions use their enthusiasm and interpersonal networks to advocate for new ideas and change. The influence of the linking agent is in the ability to access relevant resources. The range of influence each role has also differs. For example, the influence of opinion leaders does not extend beyond their ‘tribe’ (Kitson et al. 1998). Others, such as the champion or linking agent, have influence over the specific project on which they are working. Both facilitator and change agent roles are seen as boundary-crossing, in that they are not limited by professional or organizational boundaries.
What is already known about this topic

- The concepts of opinion leaders, facilitators, champions, linking agents, and change agents lack clear conceptual definition and are often used interchangeably in the literature.
- Without clear conceptual definition, the ability to conduct meta-analyses or comparisons between studies is hampered.

What this paper adds

- There is considerable overlap and confusion around the concepts, and they may simply be variations of the same phenomena but with different conceptual labels.
- The goal of each of the various roles is to improve access to timely, relevant research knowledge in order to facilitate change in practice and decision-making.
- The choice of role depends on many factors, including whether the change required in practice can be accomplished through individually focused means such as one-to-one discussion (opinion leader or champion) or requires a more structural intervention with formally trained individuals (change agent, knowledge broker and linking agent).

Other differences arise in the length of time for which the ‘influential’ is involved with the client. Opinion leaders and champions generally have long-term relationships due to the fact that they are internal to the group and organization. On the other hand, facilitators, linking and change agents tend to have short-term, time-limited relationships. This is because they are often consulted for specific projects and are orientated towards producing self-sustaining change.

Conclusions

In order to evaluate the effectiveness of interventions aimed at improving the diffusion, dissemination and utilization of knowledge in clinical practice, the meaning of concepts must be transparent. The purpose of this paper has been to explore and describe the various concepts of opinion leader, facilitator, champion, linking and change agent in an attempt to achieve a greater sense of conceptual clarity and determine the role they play in knowledge dissemination. Based on delineation of the attributes and construction of the ideal cases, cross-comparison was conducted of the similarities and differences between the roles. What is clear from the studies reviewed is that there is inconsistency in the use of the various concepts and that important confusion and overlap exists between them. We believe that they are more similar to each other than different and, in fact, all operate under the premise that interpersonal contact improves the likelihood of behavioural change when introducing new innovations into the healthcare sector.

Reliance on interpersonal contact to alter practice assumes that a fundamental problem within current healthcare systems is a gap between research and practice. Currently, the system relies quite substantially on passive dissemination of knowledge, such as publishing journal papers, and places responsibility for behavioural change on individuals. However, the literature suggests that this logic is flawed, and that often the knowledge generated by researchers does not reach its desired audience through these means. Various bridges have been suggested to address the presence of this real or perceived gap. Choice of the most appropriate bridge depends on many factors, including whether the change required in practice can be accomplished through individually focused means such as one-to-one discussion with an opinion leader or champion, or if it requires a more structural intervention with formally trained individuals, such as change agents, knowledge brokers, or linking agents. The goal of all the roles or bridges, however implemented, is to improve access to timely, relevant research knowledge in order to facilitate its uptake to change practice and improve decision-making.

Author contributions

GT and CE were involved in the study conception and design. GT performed the data collection, data analysis and drafting of the manuscript. GT, CE and LD made critical revisions to the paper. CE and LD provided supervision.

References


