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Potentials of Social Media for Tacit Knowledge Sharing Amongst Physicians: Preliminary Findings

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Abstract

Tacit knowledge sharing amongst physicians, such as the sharing of clinical experiences, skills, or know-how, or know-whom, is known to have a significant impact on the quality of medical diagnosis and decisions. This paper posits that social media can provide new opportunities for tacit knowledge sharing amongst physicians, and demonstrates this by presenting findings from a review of relevant literature and a survey conducted with physicians. Semi-structured interviews were conducted with ten physicians from around the world who were active users of social media. Initial thematic analysis revealed eight themes as potential contributions of social web tools to facilitate tacit knowledge flow amongst physicians. The emergent themes are defined, linked to the literature, and supported by instances of interview transcripts. Findings presented here are preliminary, and final results will be reported after accomplishing all phases of data collection and analysis.

Keywords

Tacit Knowledge, Physicians, Knowledge Sharing, Social Media, Web 2.0

INTRODUCTION

Healthcare organizations are highly tacit knowledge environments where both tacit (experiential) and explicit (documented) knowledge is recognised as being critical for the quality and delivery of patient care (Abidi et al. 2005; Jean et al. 2003; Saeed Mirza 2009). Healthcare professionals' tacit knowledge is the most valuable source of their "experiential know-how" acquired in critical situations of patient management. Indeed, it is about "what really works and how to make it work" rather than explicit knowledge of "how things should work" (Abidi et al. 2005). The importance of tacit knowledge in healthcare industry is well recognized and documented (Abidi et al. 2005; Engel 2008; Fox 1997; Friedman and Bernell 2006; Greenhalgh et al. ; Henry 2006; Kontos and Naglie 2009; Mimmagh and Murphy 2004; Steininger et al. 2010).

From a healthcare knowledge management (KM) perspective it is vital to harness and facilitate tacit knowledge sharing among clinical teams, particularly when they are not always physically co-located but must exchange their critical experiential knowledge (Abidi et al. 2005). Traditional knowledge sharing mechanisms and information technologies have been found to be unsuccessful in facilitating tacit knowledge sharing among clinicians (Abidi et al. 2009). For achieving this goal, technologies are needed that support free-form interaction in forms of real-time conversations, conferencing, writing, and networking (Mitri 2003).

With the advent of new web technologies such as social web initiatives, new opportunities now exist to facilitate experiential knowledge sharing among healthcare experts (Hsia et al. 2006). According to Abidi et al. (2009), social web paradigm can be helpful for tacit knowledge sharing through interactive and collaborative technologies, such as social networking and online discussion forums, where a community of specialized health practitioners can share, critique and validate their collective experiential knowledge. Furthermore, Osimo (2008) argues that social web platforms are particularly effective tools in enhancing tacit and informal knowledge sharing among individuals. Steininger et al. (2010) also state that social web technologies are effective tools for transferring tacit knowledge among doctors.

Healthcare professionals have already begun formally or informally to embrace most social web tools such as blogs, wikis, and social networking websites (Roberts 2009). Physicians-only social networks such as Sermo, Ozmosis, and Medscape have attracted over 100, 000 members each. Recent findings from Manhattan Research (2011) indicate that more than two-thirds (69%) of physicians are somewhat engaged or interested in online professional social networking sites or relevant participatory media. Another report shows that 59% of physicians used social networking sites, more than 41% listened to podcasts, and 12.9% commented on blogs

(Cooper et al. 2012). Modahl et al. (2011) also reported that over 65% of doctors used at least one social site for professional purposes.

Despite evidence demonstrating heavy use of social media platforms, by many healthcare professionals and organizations, there is still a lack of understanding on how to maximise the benefits and specifically the benefits related to maximising tacit knowledge sharing within the clinical context. Furthermore, to what extent these technologies can enhance healthcare organizations' KM process remains ambiguous. How and to what extent are social web technologies effective for tacit knowledge sharing? What are the potentials or pitfalls of social web technologies in this regard? How do social web platforms comply with the requirements of tacit knowledge sharing? What is needed to improve the capacity of social web initiatives in this regard? And many other questions that need to be investigated in the context of these new technological trends and healthcare setting.

In order to answer these questions, Information Systems (IS) research needs to evolve its understanding on how organizations and individuals need to adapt and change to effectively harness social web technologies in the workplace (Guo 2009; Manoj and Andrew 2007). Research into the use and evaluation of social web technologies in the healthcare industry is still in its early stages (EPG Health Media 2010; Kamel Boulos et al. 2006; Mack 2010). This is more significant in the field of knowledge sharing in online social tools, which is a new topic and needs further research (Wang and Noe 2010). To date, there has been a lack of academic research on contributions of social media to tacit knowledge sharing amongst physicians. Hence, this research aims to bridge this gap by investigating the potential of social media to help healthcare professionals benefit effectively from this new phenomenon as they use it for sharing their tacit and experiential knowledge. In other words, this study aims to answer the following main question: *What are the contributions of social media in facilitating tacit knowledge sharing among physicians?*

RESEARCH METHODOLOGY

Qualitative survey method has been chosen for accomplishing the research goals for both theoretical and practical reasons: Theoretically, this study is an explorative research which has focused on the role of social media in supporting tacit knowledge sharing among physicians, while posing some relevant 'what' and 'how' questions. Survey method provides a portrait of what people think about a phenomenon or do in a specific context (Cress and Kimmerle 2008; Neuman 2007). Qualitative survey is one of the research methods that is suitable for investigating exploratory questions (Dudley 2010). Furthermore, this approach was deemed a practical way to deal with the limitations of time and available resources, and issues related to getting access to the study population. Qualitative survey is recognized as less intrusive means of access to population of study which gives more freedom and choice for them to participate. Semi-structured interviews are also suggested for situations where the researcher does not have more than one chance to interview participants (Bernard 2000), which is the case with busy physicians.

Study participants were chosen based on three criteria: (1) having a minimum of two years clinical experiences due to the "experience-based" and "job-specific" nature of tacit knowledge (McAdam et al. 2007; p.45); (2) having at least moderate to high interaction with social media tools; (3) being accessible via either online or through university relationships with healthcare industry. Access to physicians was one of the most difficult parts of the study. Physicians are very busy people, and getting them involved in a non-medical study like this was difficult.

Participants were recruited through disseminating announcements mainly on Twitter and employing snowball sampling. For the purpose of this study, 10 physicians have been interviewed so far since December 2011 and interviews will continue until data saturation is achieved. Two out of ten participants were female and the rest were male. The youngest participant was 32 and the oldest 63, with an average age of 44 years. Two participants were from United States, one from Europe, and seven from Australia. Six participants were emergency physicians, one general practitioner, one transplant surgeon, one oncologist, and one immunologist. Participatory doctors had a minimum of 5 to maximum 21 years of clinical experience, with an average of 17 years.

Semi-structured interview was adopted as the data collection method obtaining a rich understanding of the context and process of using social web technologies for physicians' experiential knowledge sharing (Saunders et al. 2009). Participants were asked about what social tools they use, what kind of knowledge they share in social web space, how they use the tools, and what are their experiences and challenges with using these tools for their professional knowledge sharing purposes. All interviews were conducted over Skype and recorded using MP3 Skype Recorder software. The average duration of interviews was 38.5 minutes. The recorded interviews then were transcribed and entered into the qualitative data analysis software NVivo 9.

DATA ANALYSIS AND PRELIMINARY FINDINGS

Qualitative data obtained from semi-structured interviews were analysed using the thematic analysis approach, following the guidelines by Burnard (1991) and Braun & Clarke (2006) as well as instructions given by Bazeley (2007) about coding using NVivo. Firstly, an initial code list was developed following the open coding approach by close examination of interview transcriptions multiple times. Next, broad data categories were established by combining concepts with similar features and by considering the significance and relevancy of the concepts to the research question. In developing essential themes, some were adopted from literature and modified to the studied online context. Finally, the themes were initially defined and reported here as preliminary findings of the research. The complete results will be reported after all phases of data collection and analysis are accomplished.

Before exploring the contributions of social media for tacit knowledge sharing, firstly, the data was reviewed to see what kind of social media tools physicians use most. According to ten physicians who were interviewed in this study, blogs and twitter were the two main social tools used frequently by physicians, with multi-media sharing sites, such as YouTube, and Vimeo, in the third place. Few physicians had used wikis and public social networks such as Facebook and Google+ regularly. Almost none of the participants had used dedicated social networking sites for doctors (see Table 1).

Table 1. Type of Social Tools Used By Participated Physicians (n=10)

Tools	Level of use	Regularly	Occasionally	Rarely
Blogs		8	2	0
Micro-blogs (Twitter, Tumblr)		10	0	0
Social networks (Facebook, Google+, LinkedIn)		4	4	2
Multi-media sharing sites (YouTube, Vimeo, iTunes, other Podcast/Vodcasts)		3	3	4
Wiki		0	3	3
Physician's only social networks		0	0	0
Feeds (Google reader)		1	0	0
Other		0	2	0

Next, the data was reviewed to determine the type of information and knowledge physicians usually share on social media space, and if there are any instances of tacit knowledge sharing. Based on an initial analysis of responses, physicians share various types of explicit and tacit knowledge on social media. They share contents from published literature, journal papers, guidelines, links to other clinicians' blog posts, retweeting of interesting tweets, information from presentations, and research reviews which all can be considered as evidence of explicit knowledge sharing. On the other hand, physicians share a lot of tacit knowledge on social media in forms of tips and tricks, personal clinical opinions, day-to-day clinical experiences and lessons learned, demonstrating clinical skills through videos, best practices, writing about unusual cases, developing discussions around particular cases, or asking clinical questions. Table 2 shows a summary of these initial codes associated with the types of knowledge shared among physicians on social media. Coding sources (CS) and coding references (CR) show how many participants and how many times they talked about each type of information they share on social media. They are not necessarily indicative of the percentage of knowledge shared. The main purpose is to identify kinds of knowledge shared, particularly to seek for evidence of tacit knowledge sharing on social media, rather than showing any quantitative numbers about the volume of knowledge shared.

Table 2. Types of Knowledge Shared Among Physicians on Social Media (Initial Codes)

Explicit	CR*	CS**	Tacit	CR*	CS**
• Literature	19	8	• Clinical question and answer	18	7
• Re-sharing information created by others on blogs, twitter, etc.	7	5	• Day-to-day clinical experience	17	8
• Information from journal papers	5	4	• Clinical tips	14	6
• Sharing information about events	5	4	• Writing about clinical cases	12	6
• Links to guidelines	2	2	• Clinical expert opinions	9	5
• Lecture notes and presentations	2	2	• Discussing clinical issues	8	5
• Research reviews	1	1	• Problem solving	7	4
• Peer-reviewed links	1	1	• Individual Commentary	6	8
• News about latest research	1	1	• Cutting-edge concepts and ideas	5	4
			• Demonstrating skills using videos	4	2
			• Topic reviews	2	1

*CR: Coding references; **CS: Coding sources

It is important to recapitulate here that this study adopted tacit knowledge as a continuum, not as a sole category. Therefore, any tacit knowledge ranging from easily articulated tacit knowledge (e.g. tips and tricks, new ideas, and expert opinions) to highly inexpressible pure tacit knowledge will be considered as a tacit knowledge in this study. In addition, tacit knowledge sharing has been considered as a process between the possessor and receiver of the tacit knowledge, which not only includes socialization and externalization, but also the internalization of tacit knowledge. As a result, even reading explicit information or watching videos when they lead to the capturing or creating of new ideas, perspectives, and insights can be categorized within the tacit knowledge sharing phenomenon. This theoretical orientation was constantly employed as a guide in every phase of the coding process.

Finally, the data was reviewed to see if social media has a role in facilitating tacit knowledge according to physicians' perspective and experiences. The thematic data analysis, following the approach discussed above, revealed eight emergent themes as potential contributions of social web tools to tacit knowledge sharing facilitation. An initial analysis yielded over fifty potential factors which could be considered as potentials of social web tools in supporting tacit knowledge sharing. However, codes that the researcher was uncertain about in their accuracy and relevancy were removed, codes with common properties were merged together to establish a new code, and codes with contradictions remained for further analysis. The remaining factors subsequently were combined to develop higher order categories or themes.

The initial thematic analysis revealed eight main themes in total, shown in Table 3. They have been organized based on the number of coding references (CR) as well as the number of coding sources (CS). However, this quantitative counting does not necessarily imply any degree of significance for the concepts identified. Some of the themes that emerged align with findings in the literature, some are new, and some are still debatable. Some themes indicate that social media directly helps tacit knowledge sharing, for example best practice demonstration and synchronous discussions as occur in online socialization. Some other themes indicate that social media indirectly facilitates the flow of tacit knowledge sharing. For example, networking through social media helps to find people who possess a high level of tacit knowledge.

A brief description about each theme is provided here. In addition, each theme has been supported by presenting a selected example of interview transcriptions. It is worth noting that these findings are preliminary and more details will be provided in a complete paper after analysis is finalised.

Ability to socialize online: Creating a space for real time interaction (to talk, discuss, and comment) was one of the most frequently reported contributions of social media helping physicians to share their knowledge. Physicians who used social media regularly found it to be a social place to express what they think about a case, to ask clinical questions and to seek other opinions when needed, and to engage in discussions with peers. Examples of interview content are:

“There is a lot of cases where you put up for a clinical question for example managing the not surrounded chest drain and you'll get the response from four or five different people which range from switch positions cardio plastic surgeons where they give you a little rule of thumbs which you wouldn't normally find, you wouldn't write a blog post on it, you wouldn't write journal article on it but you can certainly share the information using Twitter, Google+ or Facebook pretty quickly.”

“I have in the last month shared some curious clinical cases that have been occurring in real time and put it out to the Twitter sphere and had very interesting and very useful conversations. The first was as an example patient who had no real history of ... And I just put it out as a bit of a critical conundrum on Twitter, all de-identified of course, and it was picked up very quickly and there was a lot of discussion that went around it, a lot of very useful discussion which I was then using in real time as a bit of a pathological sieve, just looking at that patient in front of me. So it was a very useful and a very enjoyable discussion”.

As reviewed by Panahi et al. (2012), the literature emphasizes more on social interactions for tacit knowledge sharing, particularly on face-to-face form. A few studies highlighted that tacit knowledge sharing may occur in an online environment. For example, Marwick (2001) argues that online discussion forums, chat rooms, and other real-time online interactions can effectively facilitate tacit knowledge sharing among team members. Lai (2005) has also confirmed the possibility of tacit knowledge transferring in internet discussion and chat sessions. Wahlroos (2010) observed that the emerging social media represents a significant potential in enhancing tacit knowledge sharing by providing live conversations, relationship networking, and collaboration among individuals.

Consistent with the literature findings in the context of face-to-face tacit knowledge sharing, this study also indicates that socialization in social media context has the potential to facilitate tacit knowledge sharing among physicians.

Table 3. Identified Contributions of Social Media for Tacit Knowledge Sharing (Initial Emerged Themes)

Contribution	Aspects	CR*	CS**
1- Ability to socialize online	<ul style="list-style-type: none"> - Space for question and answer - Talking to other colleagues - Multilevel multilayer conversation - Immediate feedback - Seeking second opinion - Commenting - Engaging in the discussions - Instant communication 	99	10
2- Best practice demonstration	<ul style="list-style-type: none"> - Watching videos of practical skills - Demonstrating skills through videos - Listening to podcasts 	41	10
3- Networking with colleagues	<ul style="list-style-type: none"> - Expert locating <ul style="list-style-type: none"> • Finding pioneers in the field • Tracking, following experiences of others - Inter-professional Inter-sectoral collaboration networking <ul style="list-style-type: none"> • Receiving Multi-disciplinary responses • Multi-level multi-layer conversation 	49	10
4- Interactive story-telling	<ul style="list-style-type: none"> - Case reporting and discussions - Sharing tips - Sharing lessons learned - Sharing best practices - User-generator contents, no moderator 	43	10
5- Increasing visibility of/interplay with information	<ul style="list-style-type: none"> - Creating a cycle of information with links - Faster dissemination of information - Immediacy - Publicising the information created on other places - Information feed from multiple resources in a single place - Reiterating the information - Keeping up to date with new knowledge in the field - Reaching wider community 	59	9
6- Openness	<ul style="list-style-type: none"> - Allowing everybody to have a voice - Easy to access anywhere anytime - Crossing boundaries (geographical, organizational, etc.) 	44	9
7- Trust	<ul style="list-style-type: none"> - Trusting people who already met them face-to-face - Trusting people according to how they represent themselves on social media - Doing background check on internet - Blocking un-trusted people 	17	5
8- Archiving articulated knowledge	<ul style="list-style-type: none"> - Documenting of experiences for future use - Searchable 	12	4

* CR: Coding references; ** CS: Coding sources

Best practice demonstration: Watching and observing others’ practices is accepted as a conventional and effective way to transfer tacit knowledge, particularly to transfer technical know-how and skills (as reviewed by Panahi et al. 2012). Creating such a space to watch, observe, demonstrate, and imitate best practices was one of the main themes mentioned by physicians. Some physicians have taken advantage of social media to create and share videos or audio presentations of their own particular practice. Examples of these videos on social media (e.g. shoulder replacement and placing a bougie) are well known among doctors and have created mass discussions, comments, and success stories using those methods. The following statements of physicians who participated in this study reflect some of our argument.

“I’m now interested in ultrasound in emergency medicine so there are two guys from the State who started a wonderful podcast or vodcast of ultrasound in emergency medicine where they share their knowledge which they gathered during the years and years of practice. So they are just giving it for free.”

“I’m not saying it’s the same as bedside teaching but it’s a useful substitute. You can look up a procedure and essentially learn how to teach yourself how to do it as long as you know some basic stuff. You can teach yourself how to do it from YouTube.”

Networking with colleagues: Opening up networks for like-minded people and developing mutual relationships have been regarded as effective ways to facilitate tacit knowledge sharing (as reviewed by Panahi et al. 2012). As expressed by participants of this study, the main power of social media is in building networks of clinicians with common interests around the world. Access to experts and knowing ‘who knows what’ is important in the tacit knowledge sharing process. Social media enables physicians to share their profiles, find, and follow those who are leading in the field. As two of the participants stated:

“As you begin to engage in conversation you become aware of those people who are able to help you professionally in the social media setting, you become aware of those people who are producing good quality peer-reviewed information.”

“I personally find that’s how it helps me in that the interaction between colleagues around the world, dealing with the same issue and controversy helps me have a much broader understanding of the issue.”

In addition, social media removes the boundaries among different departments and professionals. This multi-layer multi-level collaboration networking encourages tacit knowledge sharing by providing the opportunity to obtain experiences from different disciplines and to gain much wider knowledge and understanding about the situation.

Interactive story-telling: One of the best methods for tacit knowledge sharing is story-telling (as reviewed by Panahi et al. 2012). Social media easily enables people to talk about or write down their stories and experiences in blogs, wikis, and so on (Malita and Martin 2010; Strahovnik and Mecava 2009). The tacit knowledge transfer is primarily associated with sharing experience and knowledge acquired in the workplace. Social media creates such a space for physicians to tell their clinical stories, support them with pictures, audio-videos, or presentations, and to engage in conversations around the stories.

“I think the blogs allow you to expand the story, to write it longer and so on, to really go into deeper discussions. And so every piece of this social media too has its piece in the puzzle I think and that’s where blogs are, a place where you can really get the story out, a longer story, a longer version of everything and also interacting with people via comments and so on.”

“I run a lung cancer blog. I’m really constantly talking about cases that have come up in interesting conversations, that have come up in our two reports which are our group discussions of tough cancer cases I’m talking about my own patients, experiences of patients who did unusually well or poorly that might be instructive for other people and that’s pretty much how I am using”.

Increasing visibility of information: Interaction with existing knowledge (Raisanen and Oinas-Kukkonen 2008) and exposure to information from various perspectives and sources (Dinur 2011) are essential for capturing and creating tacit knowledge. In other words, the more visible the information the more ideas and tacit knowledge will come out. According to participants, social media creates a cycle of information by providing links to information published in other sources as well as by linking people together. It also enables the shared links and information to circulate virally among large communities from all over the world. This process makes knowledge more visible to clinical communities; hence increasing the chance of creating and sharing new tacit knowledge.

“I stay updated on new research because I know that, I know a couple of people who are always up to date reading new stuff and they will post really new things which they find interesting.”

“I think that prior to my use of social media, my ability to get new, up to date knowledge was extremely limited. I’m amazed at how I have, my ability to incorporate new information has absolutely exploded with social media. It’s on many levels, as we said before it’s being able to read quickly the published literature, reading people’s opinions, sharing my opinions with people, it’s this constant feedback. It’s the opposite of the old style GP¹ working out in the country on his own, never having any feedback.”

Openness: Tacit knowledge requires a climate of freedom and openness to be shared (Brink 2003; Wahab and Rose 2011; Yong and Ren-hui 2008). People are likely to be motivated to share their tacit knowledge where there is such a place allowing them to open up and express their ideas freely. Social media provides such an open space for physicians to have their own voice, exchange their personal opinions and experiences, and communicate freely with their colleagues. However, there are several challenges reported by physicians regarding the openness of social media. The major challenge is maintaining patients’ confidentiality. Physicians who are using social media are very cautious not to breach any privacy rules. However, this is mentioned as one of the main factors affecting physicians’ tendency to use social media for their knowledge sharing purposes.

¹ General practitioner

Some physicians suggested that being completely professional and regarding social media as a real world would reduce the risk of sharing your knowledge on social media. Following are participants' viewpoints about the openness of social media.

"I've found my individual voice and it's really enjoyable."

"I tweet or post on Facebook or blog when I find time, or when I find something interesting and it doesn't matter where I am, I can be at work maybe during the break in work or I can be at home reading some journal or something then I would post."

Trust: Several studies have shown that tacit knowledge sharing happens only when there is mutual trust between individuals (as reviewed by Panahi et al. 2012). Building trust may not be considered as one of the major contributions of social media to tacit knowledge sharing, since it is also reported by participants as one of the main challenges of using social media. However, participants stated that they trust doctors on social media the same as they would in face-to-face communication. They only trust physicians who they have known before, met face-to-face before, and who are well known in their area. In addition, they do background checks on the internet whenever needed and examine sharers while interacting with them through what they have shared. Here are some statements of physicians regarding trust in social media.

"The thing is, there are lots of other people you realise out there who are just like you, who are loving this conversation, absolutely loving the fact that we have this worldwide network of, and I use the term friends. They all feel like my friends that I can ask questions of and comment on their stuff and have a laugh with."

"I think from reputable sites and maybe perhaps people that are on that particular social media site that you have known or met or chatted on Skype with before or something you sort of have their trust."

Archiving articulated tacit knowledge: The process of tacit knowledge to become explicit ends when it is articulated. Articulated tacit knowledge needs to be stored for future use or for further discussion (Ortiz et al. 2008; Sanders et al. 2009; Wang and Qiu 2011; Yu 2010). Social media helps tacit knowledge sharing by archiving already articulated tacit knowledge (such as tips, tricks, personal opinions, demonstrated skills through videos, etc.) during chats, discussions, and comments in blog posts, twitter chats, or under Podcasts or Vodcasts. In addition, it allows users to search what they already shared on social media either using tag systems or search engines. Here are some of the examples of interviews where physicians expressed support of social media in helping them to archive their knowledge.

"I'll be able to store that information on the blog post and archive it on the blog. So I can then go back to that. I can hit that links to somebody else. I can then use that link kind of track with somebody else's having same problem known that I've researched I've reviewed it got the references and links back into that blog post you have now got something which is simple easy to manage and easy to share".

"The main reason for writing my blog is to document things that I come across in the literature that I might otherwise forget but which I think will be useful in saving lives. So I scan the literature for useful tips or tricks or recent research to do with resuscitation and I write a brief blog posting about that..".

In addition to the core enablers discussed above, according to participants, social media applications are cost effective and easy to use which increases the chance of physicians using these tools to share their knowledge. These adoption-related factors may be regarded as less important or less relevant factors for tacit knowledge sharing. However, it might be argued that these factors have the potential to increase interaction with existing knowledge which can therefore facilitate tacit knowledge creation and sharing.

IMPLICATIONS AND LIMITATIONS

This study develops an important connection between social web communities and tacit knowledge sharing, which have implications for the healthcare industry whose clinical teams are not always physically co-located but must exchange their critical experiential knowledge. The findings of this research may contribute to the fast growing literature on the intersection of KM and ICT particularly by focusing in-depth on physicians' tacit knowledge sharing in social media, which has not adequately been discussed in literature yet. This study's findings could also help the healthcare industry and clinical community adopt social media by providing an opportunity to better understand social platforms' potentials and how they can be harnessed effectively to maximize their benefits.

This study has both theoretical and practical limitations. Ideally, the aim of the study was to concentrate only on one type of knowledge called tacit; explicit knowledge was meant to be excluded from the study. However, tacit knowledge is a complex concept and has many dimensions. The distinction between tacit and explicit knowledge

in reality is not as clear as in the theoretical definitions. Although, for the purpose of this study the tacit-explicit continuum was adopted, making decisions about the type, quality, and relevancy of knowledge shared among physicians on social media and linking them with tacit knowledge definitions, which was not a simple task. Codes chosen and decisions made are subject to criticism. There were also practical limitations such as administrating and getting access to the study population. Physicians were found to be very busy people and involving them in a non-clinical study was not easy. The selected purposive and snowball sampling also have limitations in making generalization about the study findings for different communities of clinicians.

CONCLUSION

The purpose of this paper was to examine the contributions of social media to facilitate tacit knowledge sharing among physicians. The results of this study suggest that social media has the potential to support tacit knowledge sharing through several factors. Social media can provide a space where physicians can socialise and discuss their clinical issues freely; listen, watch, and observe best practices shared by peers; build trusting relationships with like-minded people around the world; write and share their clinical stories in an interactive way which is supported by multi-media files; reach or obtain knowledge from much wider audiences and resources; and document their articulated tacit knowledge and share it immediately.

Findings presented in this paper are preliminary. Further data collection and analysis will be conducted to accomplish the research objectives and to validate findings. We acknowledge the need for further research in several areas such as: examining different social platforms for sharing different types of tacit knowledge, seeking perspectives of different online professional communities regarding tacit knowledge sharing utilising social applications, and investigating the risks and barriers of sharing tacit knowledge in the social media context.

REFERENCES:

- Abidi, S.S.R., Cheah, Y.N., and Curran, J. 2005. "A Knowledge Creation Info-Structure to Acquire and Crystallize the Tacit Knowledge of Health-Care Experts," *IEEE Transactions on Information Technology in Biomedicine* (9:2), pp 193-204.
- Abidi, S.S.R., Hussini, S., Sriraj, W., Thienthong, S., and Finley, G.A. 2009. "Knowledge Sharing for Pediatric Pain Management Via a Web 2.0 Framework," *Studies in Health Technology and Informatics* (150), pp 287-291.
- Bazeley, P. 2007. *Qualitative Data Analysis with Nvivo*. Sage Publications Ltd.
- Bernard, H.R. 2000. *Social Research Methods: Qualitative and Quantitative Approaches*. Thousand Oaks: Sage.
- Braun, V., and Clarke, V. 2006. "Using Thematic Analysis in Psychology," *Qualitative Research in Psychology* (3:2), pp 77-101.
- Brink, V.D.P. 2003. "Social, Organizational, and Technological Conditions That Enable Knowledge Sharing," in: *Informatics*. Delft University of Technology, p. 246.
- Burnard, P. 1991. "A Method of Analysing Interview Transcripts in Qualitative Research," *Nurse Education Today* (11:6), pp 461-466.
- Cooper, C.P., Gelb, C.A., Rim, S.H., Hawkins, N.A., Rodriguez, J.L., and Polonec, L. 2012. "Physicians Who Use Social Media and Other Internet-Based Communication Technologies," *Journal of the American Medical Informatics Association*:25 May 2012 [Epub ahead of print].
- Cress, U., and Kimmerle, J. 2008. "A Systemic and Cognitive View on Collaborative Knowledge Building with Wikis," *International Journal of Computer-Supported Collaborative Learning* (3:2), pp 105-122.
- Dinur, A. 2011. "Tacit Knowledge Taxonomy and Transfer: Case-Based Research," *Journal of Behavioral and Applied Management* (12:3), pp 246-281.
- Dudley, J.R. 2010. *Research Methods for Social Work: Being Producers and Consumers of Research*, (2 ed.). Boston: Allyn & Bacon.
- Engel, P. 2008. "Tacit Knowledge and Visual Expertise in Medical Diagnostic Reasoning: Implications for Medical Education," *Medical Teacher* (30:7), pp e184-e188.
- EPG Health Media. 2010. "Social Media and Healthcare: How Do Healthcare Professionals, Patients/Consumers and Pharmaceutical Companies Use Social Media in Relation to Health?," EPG Health Media, pp. 1-25.

- Fox, C. 1997. "A Confirmatory Factor Analysis of the Structure of Tacit Knowledge in Nursing," *The Journal of Nursing Education* (36:10), p 459.
- Friedman, L.H., and Bernell, S.L. 2006. "The Importance of Team Level Tacit Knowledge and Related Characteristics of High-Performing Health Care Teams," *Health Care Management Review* (31:3), pp 223-230.
- Greenhalgh, J., Flynn, R., Long, A.F., and Tyson, S. 2008. "Tacit and Encoded Knowledge in the Use of Standardised Outcome Measures in Multidisciplinary Team Decision Making: A Case Study of in-Patient Neurorehabilitation," *Social Science & Medicine* (67:1), pp 183-194.
- Guo, C. 2009. "A Cross Cultural Validation of Perceptions and Use of Social Network Service: An Exploratory Study." Mississippi: Mississippi State University, p. 206.
- Henry, S.G. 2006. "Recognizing Tacit Knowledge in Medical Epistemology," *Theoretical Medicine and Bioethics* (27:3), pp 187-213.
- Hsia, Z.L., Lin, M.N., Wu, J.H., and Tsai, H.T. 2006. "A Framework for Designing Nursing Knowledge Management Systems," *Interdisciplinary Journal of Information, Knowledge, and Management* (1), pp 14-21.
- Jean, B., Jordi, T., Eduard, B., and Alfonso, S. 2003. "Sharing and Expanding Academic and Practitioner Knowledge in Health Care," *Journal of Health Services Research & Policy* (8), p S62.
- Kamel Boulos, M.N., Maramba, I., and Wheeler, S. 2006. "Wikis, Blogs and Podcasts: A New Generation of Web-Based Tools for Virtual Collaborative Clinical Practice and Education," *BMC Medical Education* (6), pp 41-41.
- Kontos, P.C., and Naglie, G. 2009. "Tacit Knowledge of Caring and Embodied Selfhood," *Sociology of health & illness* (31:5), pp 688-704.
- Lai, I.L.A. 2005. "Knowledge Management for Chinese Medicines: A Conceptual Model," *Information Management & Computer Security* (13:2/3), pp 244-255.
- Mack, J. 2010. "Physician-Generated Content on Social Media Sites: Doccheck Survey of Its Members," *Pharma Marketing News* (9:9).
- Malita, L., and Martin, C. 2010. "Digital Storytelling as Web Passport to Success in the 21st Century," *Procedia-Social and Behavioral Sciences* (2:2), pp 3060-3064.
- Manhattan Research LLC. 2011. "Taking the Pulse."
- Manoj, P., and Andrew, B.W. 2007. "Research Issues in Social Computing " *Journal of the Association for Information Systems* (8:6), p 336.
- Marwick, A.D. 2001. "Knowledge Management Technology," *IBM Systems Journal* (40:4), pp 814-830.
- McAdam, R., Mason, B., and McCrory, J. 2007. "Exploring the Dichotomies within the Tacit Knowledge Literature: Towards a Process of Tacit Knowing in Organizations," *Journal of Knowledge Management* (11:2), pp 43-59.
- Mimnagh, C., and Murphy, M. 2004. "Junior Doctors Working Patterns: Application of Knowledge Management Theory to Junior Doctors Training," *Healthcare Computing*, pp. 42-47.
- Mitri, M. 2003. "Applying Tacit Knowledge Management Techniques for Performance Assessment," *Computers & Education* (41:2), pp 173-189.
- Modahl, M., Tompsett, L., and Moorhead, T. 2011. "Doctors, Patients & Social Media," QuantiaMD.
- Neuman, W.L. 2007. *Basics of Social Research: Qualitative and Quantitative Approaches*, (2nd ed.). Boston: Pearson.
- Ortiz, O., Frias, G., Ho, R., Cisneros, H., Nelson, R., Castillo, R., Orrego, R., Pradel, W., Alcazar, J., and Bazán, M. 2008. "Organizational Learning through Participatory Research: Cip and Care in Peru," *Agriculture and Human Values* (25:3), pp 419-431.
- Osimo, D. 2008. "Web 2.0 in Government: Why and How," Institute for Prospectice Technological Studies (IPTS), Joint Research Center (JRC), European Commission, Seville, Spain.

- Panahi, S., Watson, J., and Partridge, H. 2012. "Social Media and Tacit Knowledge Sharing: Developing a Conceptual Model," in: *World Academy of Science, Engineering and Technology (WASET)*. Paris, France: pp. 1095-1102.
- Raisanen, T., and Oinas-Kukkonen, H. 2008. "A System Architecture for the 7c Knowledge Environment," *17th European-Japanese Conference on Information Modelling and Knowledge Bases*, Pori, Finland, pp. 217-236.
- Roberts, J. 2009. "Harnessing the Power of Web 2.0 for Medical Writers," *The Write Stuff: The Journal of the European Medical Writers Association* (18:2), pp 104-107.
- Saeed Mirza, R. 2009. "Knowledge Management and Clinical Framework for Cross Country Healthcare Organizations," in: *Department of Interaction and System Design*. Sweden: Blekinge Institute of Technology.
- Sanders, C.B., Steward, M.D., and Bridges, S. 2009. "Facilitating Knowledge Transfer During Sox-Mandated Audit Partner Rotation," *Business Horizons* (52:6), pp 573-582.
- Saunders, M., Lewis, P., and Thornhill, A. 2009. *Research Methods for Business Students*, (5 ed.). Harlow: Financial Times-Prentice Hall.
- Steininger, K., Rückel, D., Dannerer, E., and Roithmayr, F. 2010. "Healthcare Knowledge Transfer through a Web 2.0 Portal: An Austrian Approach," *International Journal of Healthcare Technology and Management* (11:1/2), pp 13-30.
- Strahovnik, V., and Mecava, B. 2009. "Storytelling and Web 2.0 Services: A Synthesis of Old and New Ways of Learning," *eLearning Papers* (15), pp 1-11.
- Wahab, S.A., and Rose, R.C. 2011. "Measuring the Effects of Relationship Quality and Mutual Trust on Degree of Inter-Firm Technology Transfer in International Joint Venture," *International Business Research* (4:3), pp 116-126.
- Wahlroos, J.K. 2010. "Social Media as a Form of Organizational Knowledge Sharing: A Case Study on Employee Participation at Wärtsilä," in: *Department of Social Research, Faculty of Social Sciences*. Helsinki: University of Helsinki, p. 100.
- Wang, C.C., and Qiu, Y. 2011. "The Current Status of Tacit Knowledge Management in Chinese Construction Industry," *5th International Conference on New Trends in Information Science and Service Science (NISS)*, Sydney, NSW, Australia, pp. 425-429.
- Wang, S., and Noe, R.A. 2010. "Knowledge Sharing: A Review and Directions for Future Research," *Human Resource Management Review* (20:2), pp 115-131.
- Yong, C., and Ren-hui, L. 2008. "A Quantitative Analysis of Factors Influencing the Tacit Knowledge Converting in Technology Transfer," *15th International Conference on Management Science & Engineering (ICMSE)*, Long Beach, CA, pp. 1365-1372.
- Yu, W. 2010. "Analysis on Influencing Factors of Tacit Knowledge Sharing and Solutions for High-Tech Enterprises," *International Conference on Information Management, Innovation Management and Industrial Engineering (ICIII)*, Guangzhou, China, pp. 310-313.

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