Online communities of practice as a communication resource for community health nurses working with homeless persons

Ruta K. Valaitis, Noori Akhtar-Danesh, Fiona Brooks, Sally Binks & Dyanne Semogas

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Abstract

Aims. This study explored community health nurses’ viewpoints about a Canadian online community of practice to support their practice with homeless or under-housed populations.

Background. Community health nurses who specifically work with homeless and marginally housed populations often report feelings of isolation and stress in managing complex problems in resource constraints. To strengthen intra-professional ties and enhance information access, an online community of practice was designed, implemented and evaluated by and for them.

Methods. Q-methodology was used. Sixty-six statements about the community of practice were collected from an online survey and focus groups, refined and reduced to 44 statements. In 2009, sixteen participants completed the Q-sort activity, rating each statement relative to the others. Scores for each participant were subjected to by-person factor analysis.

Results. Respondents fell into two groups – **tacit knowledge warriors** and **tacit knowledge communicators**. **Warriors** strongly believed that the community of practice could combat stigma associated with homelessness and promote awareness of homelessness issues, and valued its potential to validate and improve practice. **Communicators** would have used the community of practice more with increased discussion, facilitation and prompt responses. Generally, nurses viewed the community of practice as a place to share stories, validate practice and adapt best practices to their work context.

Conclusions. Online communities of practice can be valuable to nurses in special-ized fields with limited peer support and access to information resources. Tacit knowledge development is important to nurses working with homeless populations: this needs to be valued in conjunction with scientifically based knowledge.

Keywords: community of practice, homeless, marginally housed, nurses/midwives/nursing, online, street nursing
Introduction

The problem of homelessness is a global health issue (Haldenby et al. 2007). Rates of homelessness have been increasing recently in Canada (Laird 2007). It is estimated that 150,000–300,000 Canadians are homeless (Human Resources and Skills Development Canada 2009). Street nurses are community health nurses (CHNs) who have historically acted as the main caregivers for homeless populations in Canada, America, Great Britain, Europe and Australia (Hardill 2006). Hardill defines street nursing as ‘the provision of nursing care, often through outreach to non-traditional locations, to homeless and otherwise marginalized people’ (p. 93). Currently, these nurses work with homeless populations in rural and urban settings (Self & Peters 2005), clinics (Crowe & Hardill 1993), parishes (Christenson 2008), shelters and on the street. Their practice is based on harm reduction strategies, which have been found to enhance healthcare access, and are seen as an ethical approach to working with people experiencing social disadvantage (Pauly 2008). Nurses are ideally positioned to care for these clients and promote public policy changes pertaining to homelessness (Daiski 2007). The range of population groups and settings in which homeless individuals are found presents nurses with unique and complex challenges. These nurses generally work in isolation. This presents problems for nurses working in rural and remote areas where they work alone with homeless clients (Self & Peters 2005). They often practice without a robust evidence base in their specialization. Therefore, a community of practice (CoP) was established to support this group. Wenger et al. (2002, p. 4) define a CoP as ‘groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis’. This paper describes how specialized Canadian CHNs’ perceived an online CoP intervention developed to support practice.

Background

The emergence of specialty community health nursing practice in Canada known as Street Nursing is an example of what Chinn and Kramer (2008) describe as the product of knowledge development in nursing in response to contemporary social contexts (Chinn & Kramer 2008). It is based on the acknowledgement that poverty and homelessness are detrimental to mental and physical health of groups and individuals. Low health status is intimately connected to access to social, economic, political and health resources in addition to environmental conditions, rather than being attributable to individual shortcomings or refusal to adopt required health norms. Research suggests that those in lower socioeconomic positions have higher rates of hospitalization compared with the general population (Lemstra et al. 2009). Homeless persons have higher rates of service use such as emergency care; this is thought to be in part due to the exacerbation through neglect of minor health conditions, poor living conditions and access barriers to primary healthcare services (Bottomley 2001, Frankish et al. 2005, Gundlapalli et al. 2005).

At the same time, because of low levels of educational attainment, meagre economic resources and social capital in lower socioeconomic groups, poorer individuals are generally less able to navigate health systems to locate appropriate resources, especially specialist care (Law et al. 2005). In a study of the healthcare utilization by homeless adults prior to death, Hwang et al. (2001) found that 27% of the sample had no outpatient, hospitalization or emergency department visits the year previous to their death. This suggests that the population may have low access to the healthcare system despite potentially fatal health problems and that individuals who accessed health services prior to death may have received service that failed to prevent death. Among other efforts, flexible and responsive healthcare provision by nurses in a variety of outreach locations (e.g. mobile vans, shelters and churches) is a necessary measure to alleviate the impact of poverty (Bond 1999).

There is a need for these CHNs to educate and support one another and address social justice issues (Hardill 2006). However, there is dearth of accessible and reliable information that pertains specifically to CHNs. Research has been conducted on homelessness that has not been widely disseminated (Kidd & Davidson 2007) because of lack of funding and resources. Research findings are rarely disseminated in formats amenable to clinicians who work with homeless populations (Woitusik & White 1998). Consequently, these nurses face particular difficulties accessing synergistic knowledge from their CoP. This position is not unique in nursing, as the profession faces a number of challenges in harnessing the potential of their communities of practice (CoPs) (Antrobus 1997, Brooks & Scott 2006a,b).

The structure of nursing work can mean that even in large healthcare organizations the workforce may have few opportunities to communicate with one other: they are isolated in specific areas, heavily time constrained and often employed part time. The typically marginalized position of nursing in the healthcare division of labour can also mean that nursing faces constant difficulties in asserting a body of knowledge that defines it as a profession. Moreover, hierarchical structures in the profession itself have often prevented the development of
effective communication between colleagues (Spitzer 1998). The ambivalent location of nursing in the healthcare division of labour can, therefore, be seen as intensifying the effects of isolation of these CHNs, making accessing and translating tacit knowledge into practice doubly challenging. Compared with scientific knowledge, which is based on research evidence, tacit knowledge is gained through clinical practice, experience and problem solving with peers.

In CoPs, as originally conceptualized by Lave and Wenger (1991), newcomers are enculturated to a domain by learning its particular knowledge, skills and culture as they participate in its authentic activities alongside more experienced practitioners. Learning occurs through a process of ‘legitimate peripheral participation’, as novices’ participation in activities of the domain gradually increases and entails more complex tasks as they approach full community membership. In Lave & Wenger’s conceptualization, learning— a cognitive process— is about the formation of identity in a social context. In subsequent work, while retaining the notion that CoPs are an environment for the enculturation of novices, Wenger (1998) expands the concept to include informal, ad hoc collaborations among practitioners of all levels of experience to solve problems through sharing of tacit knowledge. Learning occurs continually and is inseparable from practice. Tacit knowledge sharing is also prominent in Brown and Duguid’s (1991) CoPs. These authors emphasize the unsanctioned, almost subversive nature of collaborative problem-solving. Sharing of tacit knowledge, they argue, is necessary because institutionally prescribed problem-solving procedures are inappropriate to real-world contexts and are, therefore, ineffective. In social constructionist models of knowledge management communication of experiential, problem-solving tacit knowledge is essential if organizations are to translate new knowledge into action at the operational level (McAdam & Reid 2001, Bate & Robert 2002). The need for sharing and distributing tacit knowledge from person to person across the collective CoP demands conceptualization of new communication structures.

Over the last decade, there has been a rapid public increase in use of online synchronous (Skype) and asynchronous (Facebook) communication systems. In health sciences education there has been attention on the potential of online resources and distance learning (Valaitis et al. 2004). Global nursing discussion forums, such as the Global Alliance for Nursing and Midwifery are gaining ground. A search in August 2010 for ‘nurse’ or ‘nursing’ in Google Groups resulted in over 1800 groups. However, investigating the potential of online communication systems to enhance health professional interaction and knowledge exchange in CoPs is relatively under-developed. Notable exceptions are studies by Brooks and Scott (2006a,b) in the UK and Rolls et al. (2008) in Australia. They highlight the potential for online systems to enhance nursing information exchange and strengthen CoPs. How such systems may be developed and refined for different nursing specialities and contexts warrants further examination.

Wenger et al. (2002) endorse ‘distributed’ CoPs that connect geographically dispersed units of global corporations via technologies, such as teleconferencing and web-based discussion forums. There is less emphasis in this representation on personal contact, although the authors suggest occasional face-to-face meetings. Brooks and Scott (2006a,b) identified that in nursing, the use of digital communication mediums can offer a means to convey tacit knowledge effectively across the community and enable a dispersed nursing community to support innovators and dispersed leadership and generate influential actions. However, the effectiveness of online communication tools was influenced by the degree of prioritization nurses gave to discursive and critical reflective communication, their relative autonomy to act as knowledge workers and how supportive their local professional culture was of discursive communication (Brooks & Scott 2006a,b). Further attention is required to understand how online communities might support the emergence of effective CoPs in different specialities and forms of nursing work, and groups that operate with differing levels of autonomy.

To overcome challenges these nurses face, an online CoP was designed by and for CHNs working with homeless and marginally housed populations led by academics and a community-based advisory committee. Think tanks were held in four communities in Ontario, Canada to inform CoP design specifications. Scenario-based design techniques borrowed from the computer science field were implemented (Caroll 1998, 2000). Participants developed fictitious personas depicting typical nurses who work with this population and potential scenarios which described: what problems/issues brought the persona to visit the CoP; what happened when using the CoP to address the problem; and, how the issue was resolved. Specifications for the CoP were identified from results. It aimed to enable: online discussions, peer consultation, information sharing including evidence-based and best practices, and connections with geographically dispersed members. Asynchronous discussions covered topics such as: urgent health issues, general clinical management, political action and community resources. CHNs could view each other’s profiles: a web-link function permitted them to share favourite sites. A search feature and blog was provided for sharing and searching static information (e.g. events). Help videos oriented members to CoP functions. CHNs were
required to register and enter a password to access the CoP. Research about the use of such online CoPs is needed to fill the void of evidence about their use and effectiveness to support specialized CHN nursing practice.

The study

Aim

This study aimed to explore major viewpoints of CHNs who work with homeless or marginally housed populations about their use of an online CoP as a tool to support their practice.

Design

Q-methodology was used to identify members’ salient viewpoints about the CoP. This method has grown in many areas including evaluation of job satisfaction (Chinnis et al. 2001), patients’ viewpoints about health and rehabilitation (Ockander & Timpka 2005), use of research information in clinical decision-making (Thompson et al. 2001a,b, McCaughan et al. 2002), exploring nursing attitudes towards health promotion (Cross 2005), faculty development (Akhtar-Danesh et al. 2007) and nursing education (Valaitis et al. 2007, Akhtar-Danesh et al. 2009, Baxter et al. 2009).

Q-methodology, introduced by William Stephenson (1935a,b), is used to identify unique and commonly shared viewpoints. It is particularly valuable in exploring human perceptions and interpersonal relationships (Dennis 1986). This method combines techniques from qualitative and quantitative methods: the goal is to uncover different patterns of thought rather than their numerical distribution among the larger population. In other words, the number of participants is not the important issue; rather, it is the representation of different points of view about the topic of study (Brown 1993). Therefore, the primary objective is to identify a typology, not to test the typology’s proportional distribution in the larger population (Brown 1993).

The test-retest reliability using Q-methodology has been found to be 0.80 or higher in some contexts (Dennis 1988, 1992). Content validity of statements can be assessed by literature review and domain experts. Face validity of statements is assured by using participants’ verbatim statements with slight editing for grammar and readability. It also can be assessed in pilot testing (Akhtar-Danesh et al. 2008).

Statements that formed the concourse were derived from a survey and focus groups. Early in 2008, CHNs in the CoP were invited via email to complete an anonymous 5-minute online survey including demographic and two open-ended questions. Fifteen members who worked in rural (6.7%), urban (53.3%) and mixed rural and urban (26.7%) environments responded. As the CoP was launched in Ontario, it is not surprising that 81.5% were from Ontario. CHNs visited the CoP weekly (13.3%), monthly (53.3%) or every 2–3 months (33.3%). Participants were asked to write statements that reflected their opinions about the CoP including three positive and three negative statements to generate the Q-sort concourse. Statements were generated, such as, ‘learn new information that I can implement into my practice’ and ‘large membership, but only few members participate’.

To obtain richer statements, regional face-to-face focus groups were held in the spring of 2008 in four Ontario communities. They involved nurses working in rural, remote and urban communities and a variety of workplaces (shelters, public health, mental health associations and public health).

An interview and telephone focus group was conducted involving four nurses from other Canadian regions involving 21 CHNs. These were recorded, transcribed and coded using constant comparison. Coding was reviewed by two authors to increase rigour. Although survey results corroborated focus group findings, the latter yielded richer statements for construction of the Q-sort concourse. Sixty-six statements were selected and loosely categorized as: information sharing, sharing experiences, building connections, facilitators using CoP, barriers using CoP, building a vision of CoP for the future, changes in practice related to CoP and changes in use over time. Five multidisciplinary research team members refined or removed statements to ensure clarity and uniqueness and address redundancy. To generate a representative Q-sample (statements representative of members’ opinions), an inductive process was used, as there was no theoretical hypothesis or framework involved. The final 44 statements represented participants’ unique thoughts about the CoP.

Sample/participants

Q-methodology participants were recruited via email invitation sent to CHNs (n = 114) in the fall of 2008. Four invitations were sent at 2-week intervals. Sixteen CHNs agreed to complete the exercise and received a package by mail consisting of instructions, a deck of cards (each marked with a statement and identifying number), a grid to record responses (Figure 1), a brief demographic survey, and a self-addressed stamped envelope to return the completed grid and demographic survey. All sixteen returned completed packages.

Data collection

Demographic data were collected through an eleven-item questionnaire. Nominal data were collected on professional
role, discipline, gender, nature of CoP participation, duration of membership and jurisdiction of residence. Participants were asked to indicate duration of practice as a CHN.

The Q-sort activity was a three-step process. First, participants sorted randomly numbered cards with statements into three categories: agree, disagree or neutral. The number of cards assigned to each category was limited, such that eighteen cards could be assigned to the ‘agree’ and ‘disagree’ categories, and eight cards to the neutral category. Second, participants were asked to sort cards under a series of marker cards numbered from $-4$ to $+4$ according to their degree of disagreement or agreement with each statement. In this scale, higher negative numbers reflected greater disagreement, while higher positive numbers reflected greater agreement; zero was considered a neutral rating. Participants were limited to how many cards they could assign to each rating; two statements could be assigned for each score of $-4$ and $+4$; four statements for each score of $-3$ and $+3$, and so on. Third, participants recorded the statement ID number for each score on the Q sort grid (Figure 1). The grid resembled a flattened normal distribution. It was completed and returned by post.

**Ethical considerations**

A joint university/hospital research ethics board approved the multi-component study, which included an analysis of CoP utilization statistics and users’ perceptions of the CoP. The evaluation of users’ perceptions involved focus groups and the Q-methodology study described here. When registering to the CoP, CHNs were informed that membership implied agreement to participate in some aspects of research. These included analysis of utilization and review of content in postings. Consent to participate in these study components was confirmed when registrants clicked ‘agree’. Without agreement, registrants were unable to join the CoP. Members were assured that any results would be reported anonymously and in aggregate form. Completion of the Q-sort exercise constituted implied consent.

**Data analysis**

Using PQMethod 2.11, a by-person factor analysis of the Q-sort was conducted to identify groups of participants with similar viewpoints. PQMethod 2.11 is a frequently used program developed by Schmolck (2002) and can be downloaded freely. Two methods of factor extraction were implemented in PQMethod 2.11, principal component method and centroid method. In addition, only two methods of rotation are available in this program: varimax and judgmental (or manual) rotations. Usually, rotation methods are informed by a theoretical framework rather than simply statistical criteria. Interested readers are referred to the PQMethod 2.11 Manual and Akhtar-Danesh et al. (2008) for practical guidance, and to Brown (1980) for a theoretical account. The main difference between principal component and centroid method is that in principal component the variance of ‘loadings’ is maximized where in centroid the average of the ‘loadings’ are maximized. As a common approach in Q-methodology literature, we used centroid method for factor extraction. The research team met to interpret the factors; consensus was reached to assign a name to each factor and describe the viewpoint, as the pattern of statements clearly pointed to unique and distinguishing views.

**Validity and reliability/rigour**

The Q-sort activity was pretested by one member of the CoP to establish the time needed to complete the activities, identify unclear statements or instructions, and determine ease of completion. Small edits were made based on results. Sixteen nurses completed the exercise (14% of the entire membership of the CoP. Brown (1980) recommends that 4–5 persons are enough to define each viewpoint (called a factor in Q-methodology terminology). Q-studies typically use small sample sizes and low response rates do not bias results. In addition, recruitment emails explained that all members’ views were important, regardless of their degree of involvement in the CoP. In other words, feedback was obtained from heavy and light CoP users. Our final sample consisted of members from a number of Canadian provinces and nurses with various degrees of CoP involvement resulting in a fairly representative participant sample.

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**Figure 1** Example of a complete Q-Sort Grid.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>$-4$</td>
<td>$-3$</td>
</tr>
<tr>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>9</td>
<td>24</td>
</tr>
<tr>
<td>33</td>
<td>37</td>
</tr>
<tr>
<td>41</td>
<td>21</td>
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</tbody>
</table>

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Results

Demographic results

Respondents reported a mean of 6.5 years of experience in street or outreach nursing (Table 1). They identified themselves as practitioners \( n = 12 \); educators \( n = 2 \), students \( n = 1 \) or ‘other’ \( n = 1 \); 5 were males and 11 were females. Respondents described their roles in the CoP as participants \( n = 12 \), champions \( n = 3 \) or learners \( n = 4 \); a number defined themselves as having more than one role. Participants connected to the CoP in various ways including: contributing to online discussions \( n = 1 \), reading but not posting notes \( n = 8 \), and/or connecting to live web conferences with guest speakers (new feature added after the launch) \( n = 1 \). A number of respondents identified contributing in more than one way. Participants were members of the CoP ranging from less than 1 month to greater than 1 year (Table 1). Ten respondents had no difficulty connecting to the CoP, while others reported having some \( n = 5 \) or great difficulty \( n = 1 \).

Q-methodology results

Participants loaded on two factors: tacit knowledge warriors (Factor 1) and tacit knowledge communicators (Factor 2). The two groups differed on statements listed in Table 2; this is what distinguishes the two groups. Participants differed significantly in viewpoints in relation to five main concepts including: political awareness raising activities around homelessness, nursing practice, communication strategies, work environment and technological issues.

Tacit knowledge warriors felt more strongly about the role of the CoP as a strategy for political and awareness building activities than did tacit knowledge communicators. In particular, warriors agreed more strongly that the CoP could be used for promoting awareness of homelessness in nursing education and to arm themselves to combat stigma associated with homelessness. Warriors also felt strongly that the CoP could both improve and validate their nursing practice (‘helps me know I am doing the right thing in my practice’) compared with the communicators, who were neutral about these ideas. Compared with warriors, communicators felt strongly that they would use the CoP more if there was more discussion, prompt responses and facilitation; communicators also expected to have a facilitator ensure that questions were answered. Both groups, particularly the communicators, disagreed that they were reluctant to post content because they could not delete their postings. In contrast to communicators, warriors agreed that their hectic and chaotic work environment made it difficult for them to participate and they were neutral about the notion of needing to make time from regular work to get online. By contrast, communicators did not find that the hectic work environment was a barrier to using the CoP, nor did they have to make time to get into the site. In relation to technology, although both groups disagreed that they had trouble remembering the password and disagreed about having technical issues logging in, warriors disagreed on these points more strongly than communicators.

Table 3 illustrates where there was consensus. Participants generally agreed that the CoP could be a good way to share stories, narratives and information with others across the country. Nurses felt that CoP was not being used as well as it could be for evidence-based information. However, they agreed that it could be used to adapt best practice guidelines for street nursing and as a source of evidence to impact policy. They also agreed that it could enhance their credibility as CHNs. There was also fair agreement that email reminders

<table>
<thead>
<tr>
<th>Table 1 Demographic characteristics of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursing role(s) &amp; Practitioner, ( n = 12 (75%) ) &amp; Student, ( n = 1 (6%) ) &amp; Educator, ( n = 2 (12%) ) &amp; Other, ( n = 1 (6%) )</td>
</tr>
<tr>
<td>Gender &amp; Male ( n = 4 (25%) ) &amp; Female ( n = 12 (75%) ) &amp;</td>
</tr>
<tr>
<td>Years in street nursing &amp; Mean = 6-4, SD = 5-1, Median = 5, IQR = 5 &amp;</td>
</tr>
<tr>
<td>Past role(s) in CoP &amp; Participant, ( n = 13 ) &amp; Knowledge champion, ( n = 3 ) &amp; Learner, ( n = 4 )</td>
</tr>
<tr>
<td>Experiences connecting with CoP &amp; Contributed to online discussions, ( n = 6 ) &amp; Read but not posted, ( n = 8 ) &amp; Connected to live web-conference, ( n = 6 )</td>
</tr>
<tr>
<td>Technical difficulties with CoP &amp; Great difficulty, ( n = 1 (6%) ) &amp; Some difficulty, ( n = 5 (31%) ) &amp; No difficulty, ( n = 10 (63%) )</td>
</tr>
<tr>
<td>Duration of membership in CoP (months) &amp; ( &lt; 1, n = 1 (6%) ) &amp; ( 1-3, n = 1 (6%) ) &amp; ( &gt; 3-6, n = 0 (0%) ) &amp; ( &gt; 6-9, n = 7 (44%) ) &amp; ( &gt; 9-12, n = 5 (31%) ) &amp; ( &gt; 12, n = 1 (6%) )</td>
</tr>
</tbody>
</table>

SD, standard deviation; IQR, inter-quartile range. © 2011 The Authors
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Discussion

Limitations

This study had some limitations. There was self-selection bias, therefore, results may not be generalizable to all CHNs working with homeless populations. However, the numbers of participants were sufficient to identify major viewpoints of those who responded. In addition, pretesting the Q-sort with only one participant could not ensure that it was clear for others, particularly nurses from other parts of Canada.

Discussion of results

The results presented in this paper illustrate the significance of understanding how individuals prioritize aspects of their CoP and the potential impacts they are seeking from an effective virtual community. The development of effective CoPs is dependent upon the ability of individuals in the community to critically interpret, respond and share information with colleagues (Brockbank & McGill 1998). The results allow for an understanding of how differences in attitudes among individuals may structure the way tacit knowledge warriors, communicators, rank (score)

<table>
<thead>
<tr>
<th>Distinguishing statements</th>
<th>Tacit knowledge warriors, rank (score)</th>
<th>Tacit knowledge communicators, rank (score)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political and awareness building activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I think the CoP could be used to promote awareness of homelessness issues in nursing education.</td>
<td>3 (1.51)</td>
<td>1 (0.54)</td>
</tr>
<tr>
<td>The CoP could be used by street and outreach nurses to arm themselves with information to combat the stigma associated with homelessness.</td>
<td>4 (1.70)</td>
<td>1 (0.54)</td>
</tr>
<tr>
<td>Nursing practice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I think my nursing practice could improve as a result of my involvement in the CoP.</td>
<td>3 (1.37)</td>
<td>0 (0.43)</td>
</tr>
<tr>
<td>I think the CoP helps me know I am doing the right thing in my practice.</td>
<td>2 (0.94)</td>
<td>0 (-0.22)</td>
</tr>
<tr>
<td>Communication strategies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would use the CoP more often if there was more discussion.</td>
<td>-1 (-0.25)</td>
<td>2 (0.76)</td>
</tr>
<tr>
<td>I would be a lot more inclined to participate in the CoP if there was some facilitation and a little more prompting.</td>
<td>-1 (-0.59)</td>
<td>4 (1.42)</td>
</tr>
<tr>
<td>I think it’s important to receive prompt responses to questions posted in the CoP discussion forums, to scratch the itch that that person had.</td>
<td>-1 (-0.62)</td>
<td>3 (1.41)</td>
</tr>
<tr>
<td>I think it will be important to have a facilitator in the CoP who is responsible for ensuring that questions are answered.</td>
<td>0 (0.0)</td>
<td>2 (0.97)</td>
</tr>
<tr>
<td>I am reluctant to post content in the CoP because you can’t get rid of it.</td>
<td>-3 (-1.23)</td>
<td>-4 (-2.06)</td>
</tr>
<tr>
<td>Work environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>My hectic or chaotic work environment is a barrier to my visiting the CoP.</td>
<td>3 (1.36)</td>
<td>-4 (-1.63)</td>
</tr>
<tr>
<td>I have to make time to be able to scoot away from my regular work and dive into the CoP.</td>
<td>0 (0.15)</td>
<td>-2 (-0.97)</td>
</tr>
<tr>
<td>Technological issues</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have difficulty remembering my password to the CoP. I have too many passwords for everything.</td>
<td>-2 (-1.19)</td>
<td>-1 (-0.22)</td>
</tr>
<tr>
<td>I have had technical problems with logging onto the CoP.</td>
<td>-4 (-1.67)</td>
<td>-1 (-0.32)</td>
</tr>
</tbody>
</table>

about the CoP received periodically helped to promote it and that they wanted more content added to the site. On the other hand, participants in both groups strongly disagreed that CHNs were terrified of using computers and the Internet and that they had no expertise to share. They also disagreed that they needed to postanonymously to avoid reprisals for expressing workplace frustrations, and feared exposing themselves to others. Finally, they generally disagreed that managers and peers said that visiting the CoP was not a good use of their time.
knowledge is expressed and therefore ultimately influence a community.

Individuals in the evaluated community comprised two distinctive groups, each actively anticipating distinct transformational outcomes from the CoP. The tacit knowledge warriors represented those who were clearly the most committed to embedding their individual insights into the community, especially through a desire to ensure that their understandings relating to homelessness and stigma of homelessness became part of nursing education. Knowledge capture and translation of that knowledge into a working discourse in the CoP was central to the way that warriors perceived the value of the online forum. In contrast to warriors, tacit knowledge communicators were primarily focused on opportunities for discussion and debate among the community. The communicators group therefore represented another important constituent element of an effective

Table 3 Consensus statements (those that do not distinguish between any pairs of factors)

<table>
<thead>
<tr>
<th>Statements</th>
<th>Tacit knowledge warriors, Rank (score)</th>
<th>Tacit knowledge communicators, Rank (score)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursing practice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I don’t think The CoP is being used as well as it could be right now as a source of evidence-based information.</td>
<td>2 (1:12)</td>
<td>3 (1:41)</td>
</tr>
<tr>
<td>I think the CoP should be used to adapt best practice guidelines to the street nursing context.</td>
<td>3 (1:37)</td>
<td>1 (0:76)</td>
</tr>
<tr>
<td>I think the CoP could make us more credible as street/outreach nurses.</td>
<td>2 (0:99)</td>
<td>2 (0:98)</td>
</tr>
<tr>
<td>I think the CoP can be used as a source of evidence to impact policy.</td>
<td>1 (0:48)</td>
<td>3 (1:19)</td>
</tr>
<tr>
<td>I am not sure I have any expertise to share in the CoP.</td>
<td>−2 (−1:15)</td>
<td>−3 (1:52)</td>
</tr>
<tr>
<td>Communication strategies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I think it’s wonderful to share information with nurses in different parts of the country.</td>
<td>4 (1:66)</td>
<td>3 (1:19)</td>
</tr>
<tr>
<td>I think narratives and stories are a big part of street/outreach nursing, I think the CoP provides a way to share these stories and narratives.</td>
<td>2 (0:89)</td>
<td>4 (1:62)</td>
</tr>
<tr>
<td>I wish more people would add content to the CoP.</td>
<td>1 (0:67)</td>
<td>2 (1:09)</td>
</tr>
<tr>
<td>I think it helps to get the little gentle email reminders every now and then about the CoP hey, don’t forget about the CoP!</td>
<td>1 (0:47)</td>
<td>2 (0:97)</td>
</tr>
<tr>
<td>I get a lot from just reading the content in the CoP but I am not sure that I would add content.</td>
<td>−2 (−1:12)</td>
<td>−2 (−0:98)</td>
</tr>
<tr>
<td>Sometimes I want to post in the CoP anonymously because I feel a lack of knowledge about a topic being discussed.</td>
<td>−2 (−0:97)</td>
<td>−3 (1:52)</td>
</tr>
<tr>
<td>I want to post in the CoP anonymously because I voice my frustrations about my workplace, I’d probably get nailed.</td>
<td>−3 (−1:35)</td>
<td>−3 (1:63)</td>
</tr>
<tr>
<td>I want to remain anonymous when being online because I am wary of exposing myself to people I don’t know.</td>
<td>−3 (−1:38)</td>
<td>−3 (1:52)</td>
</tr>
<tr>
<td>Work environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>My manager does not believe that visiting the CoP is a good use of my work time.</td>
<td>−2 (−0:86)</td>
<td>−2 (−0:97)</td>
</tr>
<tr>
<td>Technological issues</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I believe we (street and outreach nurses) are not computer savvy, by and large.</td>
<td>−3 (−1:53)</td>
<td>−1 (−0:76)</td>
</tr>
<tr>
<td>I am terrified about using computers and the Internet.</td>
<td>−4 (−1:91)</td>
<td>−2 (−1:41)</td>
</tr>
</tbody>
</table>

Individuals in the evaluated community comprised two distinctive groups, each actively anticipating distinct transformational outcomes from the CoP. The tacit knowledge warriors represented those who were clearly the most committed to embedding their individual insights into the community, especially through a desire to ensure that their understandings relating to homelessness and stigma of homelessness became part of nursing education. Knowledge capture and translation of that knowledge into a working discourse in the CoP was central to the way that warriors perceived the value of the online forum. In contrast to warriors, tacit knowledge communicators were primarily focused on opportunities for discussion and debate among the community. The communicators group therefore represented another important constituent element of an effective
What is already known about this topic

- Community health nurses who focus their work with homeless and marginally housed populations are among the most important professionals who provide comprehensive care to homeless populations facing multiple and complex social and health problems; yet these specialized nurses tend to be isolated and lack needed resources to support their practice.
- Organizations actively promote and oversee communities of practice to support professionals.
- The role of tacit knowledge sharing is prominent in communities where collaborative problem-solving is encouraged.

What this paper adds

- Community health nurses working with the homeless value tacit knowledge gained from discussions with others, over scientific knowledge gained from research.
- Not all users of communities of practice are looking for the same type of support; it is important to identify user sub-groups to meet each group’s needs.
- Warriors may respond more to discussions related to awareness of homelessness and stigma and activities which can validate and improve practice, while communicators may prefer facilitated active case discussions.

Implications for practice and/or policy

- Communities of practice should be designed to support the particular needs of its sub-groups.
- Q-methodology is a valuable research method to identify viewpoints of various populations to provide insight into how to meet their specific needs.
- The value of tacit knowledge needs to be considered in conjunction with scientifically based knowledge to support practice decisions.

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participation was difficult. Communicators did not feel that a hectic work day was a barrier to participation, although reported being more likely to devote personal time at home to participation.

This study represents a contribution to further understanding how novel usages of information and communication technologies can further enhance nursing practice. Technology or techno-fear did not constitute a major obstacle, although some subtle distinctions relating to different needs emerged between the two constituent groups. Importantly neither the permanency of the record nor accountability that is inherent with online participation was issues of concern across participants. Warriors, with their need for a traditional site that conveyed information, felt highly comfortable with the level of technological support and log-in arrangements. However, communicators with their need for a site that facilitated interaction and responsiveness had slightly more concerns about technical issues of logging in needed more facilitation of knowledge exchange.

As homeless populations experience multiple complex issues, they typically require help from professional groups such as nurses, physicians, housing providers and others (Ploeg et al. 2008). As a result, there is a need to consider incorporating inter-professional groups into CoPs. How nurses’ validation of their practice would be impacted by an inter-professional CoP is unclear. However, Guirguis-Younger et al. (2009) explored strategies for learning and knowledge integration by health-care workers, including nurses who support homeless persons. Three themes were identified – the need to integrate past experiences into current practice, interaction with populations being served to identify needs, and participation in inter-professional knowledge exchange. The latter was explained as seeking opportunities to acquire knowledge from others formally or informally, identifying complementary roles of workers and offering emotional support to one another. These strategies supported workers to critically reflect on practice and build confidence.

Conclusion
Q-methodology provides a means to generate major viewpoints of constituent groups in a CoP. These viewpoints should be considered when designing strategies to support subgroups. Online CoPs which support tacit knowledge development and sharing are important to CHNs working in specialty practice. Thus, tacit knowledge needs to be valued in conjunction with scientifically based knowledge. Online CoPs, therefore, may be most valued when designed to enhance problem-solving around practice issues. Future research should explore the impact of workplace environments in supporting communication, technology and evidence-based practice for CHNs. Rather than fearing social networking as a diversion from work, employers need to develop workplace policies to support CHNs’ use of online CoPs as a potential source of professional development, in particular for specialized fields with a relatively small critical mass of nurses.

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Conflict of interest
No conflict of interest has been declared by the authors.

Author contributions
RV, NA & DS were responsible for the study conception and design. RV, SB & DS performed the data collection. RV, NA, FB, SB & DS performed the data analysis. RV, NA, FB, SB & DS were responsible for the drafting of the manuscript. RV, NA, FB, SB & DS made critical revisions to the paper for important intellectual content. NA provided statistical expertise. RV & DS obtained funding. SB provided administrative, technical or material support. RV & DS supervised the study.

References


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