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GUEST EDITORIAL

Practice, Research, and Knowledge: Contributions to the Promotion of the Population's Health

Mary Ellen Purkis

The papers selected for this *CJNR* focus issue on Health Promotion represent a broad range of topics reflecting a breadth of research methods that have been used to study (1) people's experiences of health (Liepert et al.), (2) people's willingness to engage in behaviour that poses health risks (O'Byrne and Watts), (3) the relative effectiveness of different approaches by health professionals to positively affect risky behaviour (Smith et al. and Black et al.), (4) the factors that enable and constrain effective partnerships between members of the so-called health-care team (Burgess), and (5) the ways in which international and federal health policies direct and restrict the ability of grassroots organizations to respond to the needs of those seeking to engage in collective actions designed to bring improvements in health at the community level.

The breadth of the contributions in this special focus issue offer insight into the ways in which the topic of health promotion research has developed and evolved, and how an explicit conception of contemporary health-care practice is necessary to generate relevant knowledge for the discipline of nursing — in this field of nursing, as in all others, knowledge that is relevant for practice is intimately linked with research that is conducted within the context of clear and explicit conceptualizations of practice.

This is the third time that the Journal has focused on the topic of Health Promotion, and a review of the two previous issues reveals that this message about practice, research, and knowledge has been central — although it has not always been made as explicit as it is now possible to do, given the 14 years of scholarship we have to reflect back on!

The Practice of Health Promotion

The first time that health promotion received focused treatment in *CJNR* was in 1997, and the guest editor was Denise Paul. I was pleased to have an article arising out of my doctoral research published in that volume. At that time health promotion was still considered a new way of engaging in nursing practice. The concept of health promotion had presented me, as a nursing educator in the late 1980s, with some challenges as I found myself seeking ways of distinguishing "health promoting practice" from traditional practices of nursing. In those days discussions on this topic were relatively localized to the context of professional associations and educational institutions. Much of the dialogue centred on how health promotion represented opportunities for nurses to engage in autonomous practice. I recall having discussions about the ways that nurses could express their health promotion practice in the form of politically engaged community development. Against these ambitious intellectual debates about the future of nurses as leaders in health promotion, my own ethnographic studies of nursing practice in 1990 suggested that the idea had hardly penetrated to the level of everyday practice — and where it had, it was producing unintended effects on nurses' engagement in practice. Rather than addressing health matters directly with patients or clients, health promoting nurses were approaching them in quite indirect ways that sought to disguise their influence on the production of particular health outcomes (Purkis, 2002). My doctoral work produced in me a healthy respect for the practice of nursing and an enduring curiosity about the contours of change in a profession that is remarkably resilient, if sometimes resistant to changing ideas about the goal of practice.

Research Methods in Health Promotion

By the time the topic received special attention again, in 2004, methodological issues confronting researchers interested in the effects of nurses' health promoting efforts were receiving direct attention. Marilyn Ford-Gilboe served as guest editor for that volume. The centrality of practice to research in the field of health promotion was evident when Jane Drummond noted that, in order to effectively evaluate health promotion programming, researchers needed to be aware, and take account of, the multiple levels at which action and practice related to the promotion of health were taking place. This observation struck at the heart of the concerns I had noticed in my own research: Had I taken the nurses' actions at face value, I would have failed to notice the other levels at which their actions were having effects. In my case, mothers attending an immunization clinic were observed, at one level, to be the recipients of helpful suggestions for improving the health of their children; at another level, these same mothers left the clinic feeling that their decisions about how to care for their child were open to question. Drummond drew readers' attention to the manner in which health promotion research and practice is values-based. She highlighted the importance of being explicit about the principles behind the specific health promotion activities under investigation. Only by drawing these values and principles out is it possible to demonstrate how community members experience nursing practice.

Knowledge for Health Promotion Practice

And now, on the 25th anniversary of the publication of the Ottawa Charter, I have been given an opportunity to revisit the concept of health promotion and to select exemplary contributions from researchers across this country who have taken up the challenge of studying some remarkably complex practices and phenomena. Although we have read about these practices and phenomena in previous issues of the Journal, we can still be drawn in, to consider the creativity and commitment of our colleagues who engage in practice and research in the field, not to mention the individuals and community members whose lives are intricately tied up in living their health on a daily basis.

The Ottawa Charter set out a conceptual framework that could be applied to analyses of practice as well as to research design in the field of health promotion. A number of these explicit health promotion actions are reflected in the contributions selected for this issue of *CJNR*. For instance, Liepert et al. describe how engagement in the game of curling simultaneously serves to build social cohesion, provides opportunities for enhancement of physical and mental health, and creates a visible way of supporting rural community life. Research into the effects of curling in rural Canadian communities generates knowledge related to the creation of supportive environments (World Health Organization [WHO], 1986). The contribution of Smith et al., by contrast, reflects the health promotion action of developing personal skills (WHO, 1986) by investigating the relative efficacy of two different smoking cessation interventions for hospitalized patients. Burgess's contribution illustrates the significant challenges faced by a new health-care provider — the Family Nurse Practitioner — who enters a health-care system already divided up and parceled out to care providers who may not see any immediate benefit for themselves in co-operating to enhance service delivery for the population. This article reveals the implications of the Charter's attempt to support a re-orientation in health services. The Charter states that all players (e.g., individuals, community groups, health professionals, health-service institutions, and governments) "must work together towards a health care system which contributes to the pursuit of health" (WHO, 1986, p. 3). Burgess proposes a framework that offers practical advice for policy leaders and decision-makers on strategies they could implement to enable change in the system.

One way that health promotion differs from the earlier notion of health education is its much more explicit reference to the ways in which health and policy are related. The Ottawa Charter encouraged practitioners, policy-makers, and legislators to engage in the building of healthy public policy (WHO, 1986). The contribution by Laperrière offers an exemplary instance of how a careful, critical analysis of health policy requires that the effect of any given policy be followed all the way through the policy process, from development through to implementation, in order to determine whether the intended benefits for individuals at the community level have been achieved. This sort of policy analysis is essential so that both the initial development and the subsequent refinement of policy are undertaken to improve health outcomes.

Creating Conceptual Cohesion

CJNR, in its editorial policy to publish these focus issues at regular intervals, serves an important role in creating opportunities for readers to see that there is an emerging body of knowledge, arising from the practice of nurses and their interprofessional team members, that is based on research evidence and that can contribute to the development of evidence-based practice into the future. What might some of those future directions be?

Here, I would suggest some reflection on the ambitious program of research outlined by Marjorie MacDonald in the Happenings contribution. For nursing, health promotion has always offered an opportunity to engage in practice in an interdisciplinary space. And while this presents interesting opportunities to learn more about how epidemiologists and geographers and sociologists approach the practice of health care, it can also compound the challenges of ensuring that the perspective of the patient or client is privileged.

To this end, MacDonald's third theme is most encouraging. MacDonald's contribution encourages us to give consideration to the methodological space occupied by health-services research in the context of the Canadian health-care system and what has been generated by research claiming to be part of this tradition. Since much of this research is centred on the considerable task of delivering health services to Canadians, the focus to date has been very much those services offered in hospital. As a result, the efforts of primary care providers and the impact specifically of health promotion strategies as set out in the Ottawa Charter have been largely missing from this body of influential research.

MacDonald intends to address this problem by building a public health services research agenda. What I find most promising in her work is the commitment to a *public* health services research agenda. As governments confront the ongoing challenge of making long-term commitments to funding a public health system against the constant demands for reduced taxation, such a research agenda holds promise for demonstrating how an integrated health-service delivery system — from primary care through to tertiary care and back again — represents an essential support network for any society.

This program of research has been developed with contributions from an interdisciplinary research and practice team, with team members bringing knowledge and commitment from their respective disciplinary fields, thus strengthening the overall conceptual framework for the research. We should all be waiting in great anticipation for the outcomes of this health-services aspect of the larger program of research, because the very idea of joining sociological frameworks with nursing and geographical frameworks is contentious and will, I believe, provide opportunities in the years ahead to illustrate what knowledge nursing specifically contributes to this body of knowledge.

It is my contention that we nurses bring a unique contribution to this type of interdisciplinary and interprofessional practice and research. Our traditional location at the literal and virtual bedside means that we occupy a privileged place of engagement in relation to individuals and community members. This location affords us the ability to develop and implement effective ways of living our health, but only where we can respect the complexity of the decisions that each member of the community makes while seeking the connection and cohesion necessary to build and sustain a community.

The next decade of research could focus on excavating knowledge about how health promoting actions such as those highlighted in this issue of the Journal, founded on a strong conceptual base such as the Ottawa Charter, not only enable us to support one another but also help us to sustain *public* systems of health care.

References

Drummond, J. (2004). Conceiving action, tracking practice, and locating expertise for health promotion research. *Canadian Journal of Nursing Research, 36*(1), 115–120.

Purkis, M. E. (2002). Governing the health of populations: The child, the clinic and the "conversation." In V. Hayes & L. Young (Eds.), *Transforming health promotion practice: Concepts, issues, and applications* (pp. 190–206). Philadelphia: F. A. Davis.

World Health Organization. (1986). *Ottawa Charter for Health Promotion.* Retrieved February 14, 2011, from www.who.int/hpr/NPH/docs/ottawa_charter_hp.pdf.

Mary Ellen Purkis, RN, PhD, is Dean, Faculty of Human and Social Development, and Professor, School of Nursing, University of Victoria, British Columbia, Canada.

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Résumé

Les jeunes femmes et le dépistage du cancer du col utérin : quels sont les obstacles qui persistent?

Agnes T. Black, Anne McCulloch,
Ruth Elwood Martin, Lisa Kan

Une réduction du taux de participation au dépistage du cancer du col utérin des femmes âgées de 20 à 24 ans dans la province canadienne de la Colombie-Britannique a conduit à cette étude évaluant les connaissances des jeunes femmes du dépistage du cancer du col utérin et identifiant les obstacles et les facteurs incitant au dépistage. Les chercheuses ont eu recours à une conception qualitative et tenu des groupes de discussion auxquels ont participé un total de 80 femmes. La difficulté à trouver des fournisseurs de soins de santé et le caractère invasif du test de Papanicolaou figurent parmi les obstacles à la participation au dépistage qui ont été mentionnés. Parmi les facteurs susceptibles de faciliter la participation figurent l'aide à la recherche d'un fournisseur de soins de santé, la disponibilité de fournisseurs de soins féminins, des relations établies avec un professionnel de la santé ou une clinique, et l'éducation sur le test de Papanicolaou. L'éducation sur l'importance du dépistage du cancer du col utérin et l'aide à la recherche d'un fournisseur de soins de santé sont des facteurs clés qui favorisent la participation des jeunes femmes au dépistage.

Mots clés : dépistage du cancer du col utérin, test de Papanicolaou

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Young Women and Cervical Cancer Screening: What Barriers Persist?

Agnes T. Black, Anne McCulloch,
Ruth Elwood Martin, Lisa Kan

A reduction in participation rates for cervical cancer screening (CCS) by women aged 20 to 24 in the Canadian province of British Columbia led to this study evaluating young women's knowledge of CCS and identifying barriers to and facilitators of participation in CCS. A qualitative design was used and focus groups were held with a total of 80 women. Barriers to participation in CCS included difficulty finding health-care providers and the invasiveness of the Pap test. Facilitators included assistance with finding a health-care provider, availability of female providers, established relationship with a provider or clinic, and education about Pap tests. Education about the importance of CCS and assistance with finding health-care providers are key factors in increasing young women's participation in screening.

Keywords: cervical cancer screening, Pap tests, young women's health

Introduction

Cervical cancer incidence in Canada has declined from 6.5 per 100,000 women in 1972 to 2 per 100,000 in 2001, while mortality rates over the same period dropped from 18 to just over 7 — decreases that are due in large part to the widespread availability of the Pap test (Public Health Agency of Canada, 2011). The province of British Columbia is home to the world's first population-based screening program for cervical cancer (BC Cancer Agency, 2009). Efforts by the BC Cancer Agency's Cervical Cancer Screening Program (CCSP) and other provincial cancer screening programs have led to an overall cervical cancer screening (CCS) participation rate of almost 80% (BC Cancer Agency, 2010).

In spite of the widespread availability of CCS, and a health-care system that covers all of its costs, between 1995 and 2004 there was a 12% reduction in the rate of participation in CCS by women in British Columbia aged 20 to 24 (BC Cancer Agency, 2005). A decrease in participation was also seen in women aged 19 to 39 who were new to screening, implying that the decrease in recruitment of women in their twenties is part of a trend of younger women failing to incorporate CCS into their health care (BC Cancer Agency, 2005). Since 2005, the rate of CCS participation by women aged 20 to 24 in British Columbia has stabilized and begun to gradually increase (BC Cancer Agency, 2010).

Previous research has found the following predictors for under-utilization of CCS services: lower education, non-English-speaking, single marital status, and poor preventive health behaviours (Maxwell, Bancej, Snider, & Vik, 2001), as well as obesity (Mitchell, Padwal, Chuck, & Klarenbach, 2008). Additional characteristics of under-screened women include poverty, rural address, immigrant status, and Aboriginal status (Black, Yamada, & Mann, 2002), while cultural origin has also been identified as a factor (Woltman & Newbold, 2007). When asked in a survey why they had not had a recent Pap test, 53% of women responded that they did not think it necessary, and this response was especially common among younger women (Maxwell et al., 2001).

The purpose of this study was to explore factors that encourage or discourage CCS participation among young women in British Columbia. Understanding the barriers can lead to strategies for encouraging participation in CCS among young women, thus reducing morbidity from cervical dysplasia, the precursor of cervical cancer, and reducing mortality due to cervical cancer.

Methods

Study Design

This project involved exploratory research, using focus groups as the qualitative research tool to encourage free expression of ideas and opinions and to enable researchers to better understand how young women talk about CCS (Berg, 2001; Neuman, 2006). The interpretation of interview results was facilitated by recording focus group sessions and later analyzing the transcriptions (Neuman, 2006).

Sampling

Focus group host organizations were located in three geographical areas of British Columbia. Seven different towns and cities were identified through purposive sampling. The recruitment strategy consisted of contacting staff at university health clinics, human resources staff at shopping centres, and staff at community centres serving young women, asking their permission to hold a focus group at their site and requesting assistance in recruiting young women from among their clientele for participation in the focus group. The university health clinics and community centres provided large convenience samples of young women who could be invited to participate. To be eligible, the women had to be aged 20 to 29 at the time of the focus group session. Interested young women were asked to confirm that they fit this age range; some of those wishing to participate were excluded because they failed to meet the age criterion.

Our objective was to complete 10 focus groups, with the goal of having a total of 100 participants. We believed this number would allow for diversity among participants as well as saturation of themes. By hosting a large number of focus groups at a wide variety of venues, we hoped to recruit participants from different ethnic and racial backgrounds, from different educational and employment backgrounds, living in both small towns and urban settings, as well as young women who were parents and those who were not.

Study Sites

Ten focus groups were held, ranging in size from 4 to 12 participants with a median of 9 participants. A total of 80 women participated, 78 of whom were in the target age range of 20 to 29 years. Five focus groups were held at colleges or universities, two at clinics, two at or near shopping centres, and one at an Aboriginal community centre. One of the two clinic groups met at an urban community centre targeting at-risk and homeless clients. The focus group at the Aboriginal community centre comprised young mothers, our hope being to include the perspectives of both young mothers and Aboriginal women. The settings for the focus groups were the British Columbia towns or cities of New Westminster, Surrey, Burnaby, Coquitlam, Victoria, Vancouver, and Kelowna. Existing contacts at colleges, clinics, and shopping centres were used to facilitate the organization of the focus groups. In some cases, contact was made at preferred locations using information readily available on the Internet.

Recruitment

Participants were recruited with assistance from the contact person at each site. For three of the five focus groups held at universities and colleges, the site contact advertised the focus group to young women through an e-mail distribution list. The e-mail recruitment strategy generated between 15 and 40 e-mail responses from potential participants, resulting in focus groups of between 10 and 12 women. At the other two university sites, recruitment was facilitated by the fact that many women in the target age range lived in close proximity to each other. Placing posters in high-traffic locations was adequate to recruit 10 participants for each group. Two focus groups were advertised to young women working at shopping centres, to attract women who were working rather than attending college or university.

Data Collection

During the focus groups, participants were asked to complete an anonymous demographic form and then participate in a discussion. The demographic form elicited the following information: age, ethnicity, parenting status, employment status, education status, and first three characters of postal code. The focus group guide included open-ended questions about knowledge of the Pap test and barriers to and facilitators of participation in CCS. Saturation of themes was noted by the end of the last focus group and repeated themes emerged in the last two or three focus groups.

Procedures

The recruitment poster and e-mails asked young women interested in participating in the focus groups to respond by e-mail or telephone to a contact person at the CCSP. A toll-free phone number was offered for those outside the Vancouver metropolitan area. Included also was the information that $25 would be paid to compensate the participant for her time and travel costs.

The principal researcher handled the responses, confirmed the age of the women, answered questions, and scheduled their attendance at a focus group. At the beginning of each focus group, the consent form and the demographic form were reviewed and questions were answered. Participants were also asked to sign a receipt for the $25 cash to be paid at the end of the session.

Data Analysis

Transcripts of focus groups were thematically coded to identify knowledge of Pap tests and barriers to and facilitators of participation in CCS. Open coding was performed by highlighting different themes identified in the transcripts. Highlighted themes were analyzed for the performance of axial coding, which further organized themes emerging from the transcripts (Neuman, 2006). The qualitative data were analyzed using standard iterative and interpretative qualitative methods; three of the researchers (AB, AM, and RM) reviewed all of the transcripts and identified themes. Transcripts and field notes were reviewed in an iterative manner to ensure that all emergent themes were captured. Representative quotes were selected from the transcripts to illustrate the main themes identified.

Ethical Considerations

Ethics approval for the study was obtained from the University of British Columbia/BC Cancer Agency Research Ethics Board prior to the scheduling of the first focus group. Confidentiality was ensured by keeping the names of participants separate from the recording and transcript of the focus group in which they took part. No attempt was made to link the demographics of participants with their voices in the focus groups. Participants were given a consent form to read and sign prior to taking part in the focus group. The consent form assured the women of confidentiality and requested them to refrain from discussing individual responses to focus group questions outside of the focus group. The consent form clearly indicated that the participant could decline to respond to any question and could withdraw from the focus group at any time.

Results

Analysis of the demographic forms showed that the focus groups were made up of 66% Caucasian, 17% Asian, 13% Aboriginal, and 2% Latina women. Seventy-two percent of participants were college or university students, almost 13% were parents, and 89% were employed. The women represented 43 different areas of British Columbia, as measured by the first three characters of their postal code; 6% of participants lived in rural areas of the province, as determined by postal code analysis.

Six categories emerged from the data, as follows: (1) existing knowledge about Pap tests, (2) opinions about why women participate in Pap screening, (3) where young women get Pap tests, (4) facilitators of participation in Pap screening, (5) barriers to participation in Pap screening, and (6) opinions about Pap reminders and methods for receiving health information.

Existing Knowledge About Pap Tests

Most participants accurately defined a Pap test as a test for cervical cancer, although many expressed the misperception that Pap tests include screening for multiple sexually transmitted infections (STIs). One woman said, "I kind of thought of the Pap test as sort of maintenance, like taking your car into the shop to check for any abnormalities — it's routine." Most believed that Pap screening should begin within a year of a young woman's becoming sexually active.

Why Young Women Participate in Pap Screening

Many of the participants stated that they took part in Pap screening because they were reminded to by a relative or a health-care provider: "My mom said it was just part of being grown up, so I just do it." Others said that they had participated in Pap screening because they were pregnant (n = 3) or while they were incarcerated (n = 1) and had been prompted by a health professional. The most common answer to the question of what prompts a young woman to participate in CCS was that renewal of her prescription for oral contraceptives was linked to annual CCS.

Where Young Women Get Pap Tests

Many of the participants reported that they had initiated CCS with their family physician in their hometown but since moving away from home for work, university, or other reasons they had not established care with a provider or clinic. Some women had used walk-in clinics and were satisfied with the care they received, while others were unaware that Pap tests were available at walk-in clinics and still others were dissatisfied with walk-in clinics. Among those who reported dissatisfaction, a typical response was, "I find that when I go to a walk-in clinic for anything . . . the doctors don't even sit down; they stand at the door and . . . you're in and out in 5 minutes."

Facilitators of Participation in Pap Screening

The first question we asked about facilitators of CCS was, "What things would help you get a Pap test?" The responses are grouped into several themes.

Assistance with finding physician/health-care provider. The majority of participants agreed that they would be encouraged to get a Pap test if they were given assistance in locating a clinic or health-care provider nearby: "That would make a big difference . . . for the general population of our age . . . because I've been here for almost 4 years and I've been bounced around through walk-in clinics and cannot find a family doctor — it's crazy."

Having an established relationship with a health-care provider or clinic. In every focus group, women stated that they were more likely to participate in CCS if they had an established relationship with a physician, nurse practitioner, or clinic. The following comment is typical: "Then you get more regular Paps, because you've got an established relationship, and they have your history on file, too, which makes a huge difference."

Education about Pap tests. Many participants said that educating women about the importance of Pap testing and what it entails would be a good way to encourage regular participation in CCS: "Education in high school would make a difference" . . . "Just, you know, finding out more of what is actually entailed. I think there's a lot of fear surrounding it the first time. When they actually find out what it is, it's not so scary."

Availability of testing by a female provider. Many participants expressed a preference for having their Pap test performed by a female provider: "Most women want to go to women; they don't like to go to men . . . it's just more comfortable" . . . "Maybe not for the second one, but if you're going for the first one, it does make it a lot more comfortable."

A small minority of participants stated a preference for male physicians (n = 4) or said that the gender of the provider made no difference to them.

"Pap Day" or "Pap Week." The young women were asked if they would be more likely to participate in CCS if there were an occasion dedicated to it, such as a Pap Day or Pap Week. Many responded enthusiastically and several mentioned having heard of or participated in the Papalooza event in Vancouver, a festive Pap Day held in the Downtown Eastside, a low-income neighbourhood where street outreach nurses perform Pap tests. Participants seemed particularly interested in taking part in a Pap Day/Week held in a familiar location such as their community or campus health clinic. However, some participants remarked that Pap Week sounded like an event that would involve a large number of women and a lot of waiting in line. For this reason, some women indicated that an event such as Pap Week would not encourage them to take part in CCS.

Other facilitators. Several women felt that there would be greater participation in CCS by young women if it were made more convenient: "Having a clinic on campus makes it easier" . . . "having a day where there's no appointment required" . . . "no travel time at all is best, easy to get to." Others explained that "girlfriends remind each other, and it's like, 'Well, you should go,' and, you know, then you get on each other's case."

Barriers to Participation in Pap Screening

The women were asked what they saw as the barriers keeping them or other young women from regularly participating in CCS. Their responses are grouped into four categories: difficulty finding a health-care provider, especially a female provider; fear and discomfort; amount of time required; and general procrastination.

Difficulty finding a health-care provider, especially a female provider. Many participants felt that the primary barrier to CCS participation was lack of a regular health-care provider: "I don't have a family doctor. . . . he retired a couple of years ago and it's so hard to find a . . . family doctor" . . . "It's pretty hard, especially with the female doctor not taking new patients — that's a bit of a challenge, that I have to . . . wait to get a female doctor, and I prefer to go to a female doctor for a Pap."

Fear and discomfort. Several participants noted that fear and discomfort keep women from getting a Pap test. Many felt that girls are not well educated, in either primary or secondary school, about what is involved in getting a Pap test or why testing is important: "I think they're . . . not totally educated about it and they're scared . . . they don't know what's going to happen" . . . "I think maybe for a girl [who] is very sexually active and [has] never had [a Pap test] just out of fear . . . and then, you know, she's had so many partners and is aware that she's at risk and thinks that if she goes she might have something to deal with . . . she'd rather just not know" . . . "A lot of people are scared to go because they're scared to find out there's something wrong with them" . . . "I've [had a Pap test] a bunch of times, and it's not scary for me or anything but it doesn't make it any less uncomfortable."

Other participants stated that the Pap test was "too invasive" or "just very private." One woman said, "Sometimes it's intimidating for young girls . . . they get embarrassed."

Amount of time required. Several participants stated that they postponed scheduling a Pap test because of the amount of time required. One woman said, "My schedule is really packed . . . it's hard to commit to going to the doctor for 45 minutes to have . . . a breast exam and Pap done." Many young women mentioned that the Pap test is "just one of those things you procrastinate on." One participant said, "It's kind of always in the back of your head, you know, you don't really think about it . . . being all that important." Another response was, "It's always been something I've kind of put on the back burner."

Other barriers. We asked the participants whether transportation was a barrier to their taking part in Pap screening, and for the majority it was not. Some young women on rural college campuses explained that not owning a car made them less likely to participate in screening. We also asked about child care, but since 88% of the participants were not parents, this did not represent a barrier. Those who were parents said that Pap tests available at a familiar clinic, with child care provided, would be the most convenient option.

Opinions About Pap Reminders and Communication Methods

The participants were asked whether reminders about Pap testing was an effective method for promoting participation in CCS, and the overwhelming response was yes. When asked for their preferred method of communication, the vast majority of participants responded that they would prefer to receive reminders by e-mail and stated that it would make no difference whether the e-mail came from a cancer screening program or their health-care provider.

Discussion

While previous studies have reported several barriers to women's participation in CCS, such as a belief that the Pap test is unnecessary (Maxwell et al., 2001), this study found that lack of access to health-care providers, or lack of an established relationship with a provider, presents an additional and significant barrier to young women's participation in CCS. Cervical cancer screening is available in Canada at no charge; however, the present findings illustrate that even when the barrier of cost is removed, a significant barrier still exists if young women are unable to locate or establish a relationship with a health-care provider who offers Pap tests.

To our knowledge, this is the first study to ask young women for their opinions about receiving e-mail reminders when they are due for a Pap test. Their interest in receiving e-mail reminders suggests that this method may be key to improving screening rates among this population.

The young women who took part in the study were well educated about the importance of the Pap test, and they understood that the test is essential for women who are sexually active. However, there remained some confusion about Pap tests and STI screening, with many young women mistakenly assuming that they were being tested for all STIs when they participated in CCS.

There is a need for more education of young women, especially at an early age, about the importance of the Pap test. Education about CCS may help to overcome the barriers of fear and discomfort identified by the focus group participants, and may normalize the Pap test as part of routine health care. Participants also felt that education about CCS would encourage women to have their first Pap test.

Many participants had not established a relationship with a health-care provider or clinic. Assistance with locating a provider or clinic nearby was identified as a facilitator of participation in CCS, and the lack of a relationship with a provider or clinic was identified as a strong barrier. One attempt to overcome this barrier is the Web site developed by the CCSP, which shows women which clinics and providers in their community offer CCS.

For those young women who are sexually active and use oral contraceptives, the connection made by clinics and health-care providers between annual renewal of contraceptive prescriptions and CCS is an effective tool for promoting participation in CCS. However, those women who use birth-control methods that do not require a prescription or who do not practise birth control may not receive an annual reminder.

Many participants noted that they were encouraged to participate in CCS by health-care providers or by relatives and believed that these reminders were effective. Health-care providers should continue to educate young women about the importance of the Pap test and encourage them to participate regularly in CCS.

Many women indicated that they would participate in Pap Week and Pap Day events if these were available. Organization of such activities should be expanded, and consideration should be given to offering convenient appointment times, as a key non-compliance factor identified by women is inconvenient appointment times (Olowokure, Caswell, &

Duggal, 2006). Female providers should be used whenever possible; many young women expressed a preference for female providers of CCS. The findings of other studies confirm this preference (Webb, Richardson, & Pickles, 2004), with one study suggesting that revealing the gender of the Pap tester in invitation letters to women may increase the uptake of screening (Gannon & Dowling, 2008). The use of nurse practitioners (the majority of whom are female) should be explored as one option for meeting this need.

Our study found that e-mail was the most successful strategy for recruiting young women for the focus groups. By recruiting through a variety of venues, we were able to ensure that the sample represented diversity with respect to ethnicity, geography, employment status, and parenting status.

The focus groups were all facilitated by one researcher (AB). While attempts were made to recruit 10 participants for each group, this was not always possible. In most focus groups, participants needed encouragement to fully engage in the discussion. This could be because the subject matter was of a sensitive nature. Encouragement was offered by holding the focus groups in rooms that were private and by providing snacks and comfortable seating. At times participants seemed embarrassed or slightly uncomfortable with the discussion about Pap tests. Prompts were used, such as empathetic listening and verbal prompts (e.g., *Could you say more about that? Is there anyone who hasn't spoken yet who would like to add an opinion?*). The two smallest focus groups, with 4 participants each, were the most difficult to conduct, as the women voiced their opinions only briefly and the follow-up prompts did not elicit much further conversation. This is consistent with the literature, which suggests an optimal size for focus groups of between 6 and 12 participants (Neuman, 2006).

Limitations

Opinions voiced in this study were limited to the 80 women who participated in the focus groups. The focus groups represented significant numbers of Caucasian, Asian, and Aboriginal women, which are the three most numerous ethnicities in British Columbia. However, only two Latina women were included, and no women of African descent. Additionally, all focus groups were conducted in English, limiting participation to those fluent in English. The results therefore may not represent the opinions of African or non-English-speaking women.

Seventy-two percent of participants were college or university students, while the figure for British Columbia women aged 20 to 29 attending college or university is approximately 50% (Statistics Canada, 2009). Therefore our results over-represent the opinions of this demographic. Focus groups were conducted primarily in urban areas and 94% of participants listed urban addresses, so the views of women residing in rural British Columbia are limited in the analysis.

It was difficult to recruit women who were employed at the shopping centres; therefore the knowledge, barriers, and facilitators for young women who are employees rather than students may be under-represented in the results.

Recommendations

Educate women about the importance of Pap testing and what it entails. CCS education should emphasize the fact that cervical cancer is curable when diagnosed early. Cancer screening programs can partner with health educators in schools to include components on CCS.

Offer assistance with locating providers or clinics where new patients are accepted and Pap tests are offered. Public health Web sites with links to help women locate clinics and health-care providers who perform Pap tests should be more widely promoted among young women, as a way to address the barrier of lack of established relationships with health-care providers or clinics. Regional cancer screening programs should consider partnering with nursing and nurse practitioner organizations or medical associations to develop resources for helping women to find health-care providers.

Encourage providers to continue promoting young women's regular participation in CCS. Partnerships with family physicians, nurses, and nurse practitioners can be established or strengthened to encourage these providers to continue educating women about the importance of CCS.

Continue and expand Pap Day and Pap Week events, using female providers whenever possible. The use of nurse practitioners (the majority of whom are female) should be explored as one option for addressing the need for more female providers of CCS.

Send e-mail reminders to women who are due for a Pap test. This idea was well received by participants and could increase CCS rates among young women.

Future Research Directions

Future research should explore rates of CCS participation and cervical cancer mortality among rural women. Future researchers could also design an intervention and evaluation study to measure CCS rates in different models of care, in order to explore whether rates differ significantly in different health-care delivery models.

References

BC Cancer Agency. (2005). *2005 annual report: Cervical Cancer Screening Program.* Retrieved March 1, 2009, from http://www.bccancer.bc.ca/PPI/Screening/Cervical/about.htm.

BC Cancer Agency. (2009). *About the program.* Retrieved April 28, 2009, from http://www.bccancer.bc.ca/PPI/Screening/Cervical/about.htm.

BC Cancer Agency. (2010). *Annual report 2009.* Retrieved April 8, 2010, from http://www.bccancer.bc.ca/PPI/Screening/Cervical/about.htm.

Berg, B. (2001). *Qualitative research methods for the social sciences.* Boston: Allyn & Bacon.

Black, M. E., Yamada, J., & Mann, V. (2002). A systematic literature review of the effectiveness of community-based strategies to increase cervical cancer screening. *Canadian Journal of Public Health, 93*(5), 386–393.

Gannon, M., & Dowling, M. (2008). Increasing the uptake of cervical screening programmes. *British Journal of Nursing, 17*(20), 1280–1284.

Maxwell, C. J., Bancej, C. M., Snider, J., & Vik, S. A. (2001). Factors important in promoting cervical cancer screening among Canadian women: Findings from the 1996–97 National Population Health Survey (NPHS). *Canadian Journal of Public Health, 92*(2), 127–133.

Mitchell, R. S., Padwal, R. S., Chuck, A. W., & Klarenbach, S. W. (2008). Cancer screening among the overweight and obese in Canada. *American Journal of Preventive Medicine, 35*(2), 127–132.

Neuman, W. L. (2006). *Social research methods: Qualitative and quantitative methods.* Boston: Pearson.

Olowokure, B., Caswell, M., & Duggal, H. V. (2006). What women want: Convenient appointment times for cervical screening tests. *European Journal of Cancer Care, 15*(5), 489–492.

Public Health Agency of Canada. (2011). *Cervical cancer facts and figures.* Retrieved February 3, 2011, from http://www.phac-aspc.gc.ca/cd-mc/cancer/cervical_cancer_figures-cancer_du_col_uterus-eng.php.

Statistics Canada. (2001). *Canadian census, 2001.* Retrieved March 20, 2009, from http://www40.statcan.ca/l01/cst01/demo26k-eng.htm.

Webb, R., Richardson, J., & Pickles, A. (2004). A population-based study of primary care predictors of non-attendance for cervical screening. *Journal of Medical Screening, 11*(3), 135–140.

Woltman, K. J., & Newbold, K. B. (2007). Immigrant women and cervical cancer screening uptake: A multilevel analysis. *Canadian Journal of Public Health, 98*(6), 470–475.

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Agnes T. Black, RN, MPH, is Nursing Research Facilitator, Providence Health Care and Vancouver Coastal Health, Vancouver, British Columbia, Canada; at the time of the study she was with the BC Cancer Agency, Vancouver. Anne McCulloch, BJ, MA, is Senior Writer, Faculty of Applied Science Development Office, University of British Columbia, Vancouver; at the time of the study she was Promotion and Education Specialist, Cervical Cancer Screening Program, BC Cancer Agency. Ruth Elwood Martin, MD, FCFP, MPH, is Clinical Professor, Department of Family Practice, and Lead Faculty for Research, Post-graduate Program, University of British Columbia. Lisa Kan, MSc, is Screening Operations Leader, Breast and Cervical Cancer Screening Programs, BC Cancer Agency.

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Résumé

Cadre de travail pour évaluer l'intégration du rôle de l'infirmière praticienne dans les soins de santé primaires

Judith Burgess, Alietha Martin, Wayne Senner

Dans la province canadienne de la Colombie-Britannique, le rôle d'infirmière praticienne (IP) est officiellement entré en vigueur en 2005. Une recherche-action participative (RAP) a été menée auprès d'IP pour déterminer comment la collaboration fait progresser l'intégration du rôle des IP dans les soins de santé primaires. Les auteurs présentent les résultats de cette recherche, qui explore la signification de l'intégration du rôle des IP. L'étude a porté sur cinq aspects de cette intégration : l'autonomie, la reconnaissance, l'inclusion, la contribution et l'alliance. Ces aspects, jumelés à d'autres indicateurs, ont informé une démarche soutenant l'intégration du rôle des IP dans le cadre des soins de santé primaires. L'importance de la collaboration pour faciliter la progression de l'intégration du rôle des IP a fait l'objet d'une discussion. L'intégration du rôle des IP est liée aux politiques de la réforme des soins de santé primaires et à la promesse d'une approche holistique de la santé promouvant des soins pour la clientèle et la collectivité. Le cadre de travail peut aider les concepteurs de politiques, les décideurs et les chercheurs à cerner les obstacles freinant l'intégration du rôle des IP, à soutenir un processus de mise en place et d'évaluation d'un tel rôle, et d'en assurer la continuité.

Mots-clés : infirmière praticienne, intégration du rôle, collaboration, recherche-action participative

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A Framework to Assess Nurse Practitioner Role Integration in Primary Health Care

Judith Burgess, Alietha Martin, Wayne Senner

In the Canadian province of British Columbia, the nurse practitioner (NP) role was formally introduced in 2005. A participatory action research study was undertaken with NPs to examine how collaboration advances NP role integration in primary health care (PHC). The authors report on the study, in which the meaning of NP role integration was explored. The study uncovered 5 dimensions of NP role integration: autonomy, recognition, inclusion, contribution, and alliance. These dimensions, along with sample indicators, informed development of the NP Role Integration in PHC Framework. The significance of collaboration for advancing NP role integration is discussed; NP role integration is linked to the politics of PHC reform and the promise of holistic health promoting care for clients and communities. The framework has utility for policy leaders, decision-makers, and researchers in addressing barriers to role integration, supporting role evaluation, and securing and safeguarding the NP role.

Keywords: nurse practitioner, role integration, collaboration, participatory action research

All Canadian provinces and territories have introduced the nurse practitioner (NP) role through legislative, regulatory, and educational initiatives (http://NPCanada.ca). The NP role is intended to increase access to primary clinical care, preventive screening and early detection of disease, wellness and health promotion, health education and counselling, and outreach to vulnerable populations (DiCenso et al., 2007). The formal introduction of NPs is significant, because the NP role has suffered from a discontinuous history (Haines, 1993; McDonald & McIntyre, 2010). Limitations with regard to policy structures, role clarification, team relations, accountability measures, and leadership have been reported. Enabling legislation, regulation, and education have remedied the earlier restrictions on NP scope of practice (Canadian Nurses Association [CNA], 2006). However, role ambiguity continues to cause confusion for health consumers and for other disciplines, even nursing, particularly in areas of limited NP supply (Bryant-Lukosius, DiCenso, Browne, & Pinelli, 2004). Team relations are challenged by historical interprofessional tensions and territorialism, limited organizational support to teams, and slow-to-change systems — for example, interprofessional education has yet to be formalized (Hall, 2005). Accountability is problematic due to insufficient tools for measuring the value-added contributions of NPs (Browne & Tarlier, 2008). Leadership support and insufficient funding, resulting in poor utilization of NPs, remain concerns in many jurisdictions (Stevenson & Sawchenko, 2010). Research on NP role integration will help to address existing barriers, support role evaluation, and further secure and safeguard the NP role.

In the province of British Columbia, NP legislation was introduced in 2005. This study, undertaken in 2008, examined, from the perspective of NPs, the question of how collaboration advances role integration in primary health care (PHC). Collaboration was viewed by the researcher, and substantiated in the literature, as a key enabler of team-based care, and role integration was thought to occur at the point of care in PHC team settings, although the literature lacked clarity on the meaning of role integration. The researcher brought to the study her experience as director of a community health centre in which she championed an NP pioneer and weathered the ups and downs of team-based practice, health promotion and holistic care, and the politics of PHC reform. As a result, participatory action research (PAR) was employed in the study to foster relations with and amongst NPs, share and generate practice knowledge, and engage in collective visioning and action to enhance NP role status (Reason & Bradbury, 2001).

True to PAR, this article is written by the researcher and two NP participants. Our purpose is to report on the study's findings with respect to the meaning of NP role integration and its various dimensions. The participatory inquiry uncovered five dimensions of NP role integration: autonomy, recognition, inclusion, contribution, and alliance. These dimensions, along with sample indicators, informed development of the NP Role Integration in PHC Framework. In this article we outline the British Columbia context of NP role development, the study's methodology, the findings, including the NP Role Integration in PHC Framework, application of the framework by the two co-author participants, and a discussion of the significance of collaboration in advancing NP role integration.

NP Role Development in British Columbia

Provincial NP role *introduction* was guided by a stakeholder consultation process (College of Registered Nurses of British Columbia [CRNBC], 2005) and an early research study (MacDonald, Schreiber, & Davis, 2005). Strategic planning fostered stakeholder consensus of graduate-level entry and NP scope of practice. Provincial legislation gave NPs title protection and the CRNBC provided the regulatory mandate for NP practice oversight (CRNBC, 2008). The province funded British Columbia universities to initiate NP graduate programs and provided 3-year funding to regional

Health Authorities (HAs) for NP role start-up (Ministry of Health Services, 2006).

Regional NP role *implementation* undertaken by all six HAs varied in approach. According to the literature, role implementation is contingent upon a systematic evidence-based approach, to ascertain health-service needs, design relevant NP positions, set operative policies, and allocate resources (Bryant-Lukosius et al., 2004; CNA, 2006, 2008; DiCenso & Matthews, 2005). The HAs were given limited time and direction by the province to prepare NP implementation; as a result the regions tended to be more reactive than systematic in their planning. The 3-year funding enabled each HA to plan for and implement 10 to 15 NP positions in various PHC settings.

Program NP role *integration* within PHC practice settings also varied. The literature indicates that role integration is fostered by proactive leadership, clarification of NP autonomy, education in team roles and scopes, collaborative team planning, and technology to support shared care (Almost & Laschinger, 2002; Jones & Way, 2004; Reay, Golden-Biddle, & Germann, 2003). HA leadership was inconsistent in terms of adequately preparing program sites and community partners, which for some NPs brought significant start-up challenges. A few of the HAs used the strategy of NP communities of practice (CoP) to promote role integration (Sawchenko, 2009; Wenger, McDermott, & Snyder, 2002). CoP enhanced NP relations, role integration strategies and alliances, and NP collective capacity.

System NP role *sustainability* was contingent upon incremental and ongoing funding of NP positions; the province's funding commitment was limited to 3 years. The securing of long-term commitments calls for strategic political and policy leaders to champion the NP role (McDonald & McIntyre, 2010), research partners to produce evidence of role effectiveness (Horrocks, Anderson, & Salisbury, 2002), and wide public support of NPs. To achieve sustainability, the NP role must be viewed as integral to system efficacy (Pogue, 2007). Now, 5 years post-legislation, the NP role is at risk in British Columbia due to inadequate provincial/regional funding mechanisms and inadequate political/policy support for health-system change.

Methodology: Participatory Action Research

Study Design

The researcher employed a PAR approach and, to guide the study, drew upon Hall's (2001) definition of PAR as "an integrated three-pronged process of social investigation, education and action to support those with less power in their organizational or community setting" (p. 171). This definition also provided three-point criteria for later validation of the-quality and integrity of the study (Bradbury & Reason, 2001). Social investigation was intended to foster a participatory stage for NPs to share stories, engage in critical and collective reflection, and become co-constructors of everyday worklife (Burgess, 2006). Education was meant to produce an informative stage when ideas and theorizing of collaboration would give new meaning to role integration. Action was expected to generate a transformative stage at which to address power relations and advance NP role integration.

Participant Recruitment

A strategic sampling approach was used for recruitment (Mason, 2002). Two HAs were targeted because of similarities in population size and urban/rural geography; also, both had already initiated a CoP to support NP role development. To protect the anonymity of those involved, HA demographics are not reported. Ethics approval was obtained from the university and each of the HAs. Approval by each Chief of Professional Practice was also obtained, to ensure employment release time for NP participation. A notice, prepared by the researcher and e-mailed by each HA, invited all NPs to an introductory research meeting (in fact, they were asked to participate in the study as co-researchers) at which the research questions were introduced, consent forms reviewed, and future meeting dates and locations set. Consent was obtained from 11 of the 12 NPs employed in one HA and 6 of the 12 employed in the other. The variance in NP recruitment rates was later attributed to CoP maturation; the CoP that had been active for 18 months had nurtured a collective enthusiasm for discovery, while the other CoP had begun 3 months prior to the study and was still at the relationship-forming stage.

Participant Engagement

The NPs in each HA requested that the study sessions be held in conjunction with their scheduled CoP meetings, which served to streamline rural travel. Over a 6-month period, five data-collection sessions and two action sessions were held for each HA group; this produced a combined total of 22 hours of audiorecorded data. The researcher prepared evolving questions for each session to facilitate group dialogue about the current status of NP collaborative practice in PHC, enablers of and barriers to collaboration, the meaning of role integration, enablers of and barriers to NP integration, and collaborative strategies to advance role integration.

Data Collection

At the social investigation (participatory) stage, the study's principles were collectively developed, journal articles shared for the grounding of group knowledge, the inquiry process described, and trusting interactions and relations nurtured. The education (informative) stage focused on discussion of NPs' patterns of everyday PHC practice, experiences of role development, and factors contributing to collaboration and role integration. The action (transformative) stage unfolded as two action strategies. The first was to invite HA leaders responsible for NP role implementation to an audiorecorded "action interview" to discuss the NP planning processes adopted in each HA. The second was to host a research action day in each HA, with an evaluation expert designing a research template for NPs to initiate inquiry and analysis within their practice settings. Action strategies have subsequently included publication and dissemination of research findings.

Data Analysis

Following each session, the audiorecording was transcribed and preliminary analysis undertaken. Data analysis was carried out through a process of constant comparison drawn from the analytic techniques of grounded theory (Charmaz, 2005; Schwandt, 2001). QSR NVivo 7 software was used to index data into initial codes, create sub-themes, formulate themes, and make conceptual correlations (Mason, 2002). Interpretations were taken to NP study meetings, in the form of text and PowerPoint presentations, to spark further discussion and analysis. HA data sets were initially kept separate to allow for comparison of group results and were later integrated to capture common themes and findings. Participants commented on draft summaries and took part in dissemination and joint publication; this is consistent with the role of PAR in fostering enduring consequences (Bradbury & Reason, 2001).

Results: Explicating a Meaning for Role Integration

Only a few sources found in the literature used the term role integration, and a definition or description was not clearly articulated (CNA, 2006; DiCenso & Matthews, 2005; IBM Business Consulting Services, 2003). Therefore, as part of the study, the meaning of role integration was collectively explicated. Five dimensions emerged from the data analysis to describe the meaning of NP role integration in PHC. NPs would attain role *autonomy* to fully enact their scope of practice, gain role *recognition* in delivering holistic health promoting care for clients and communities, achieve role *inclusion* as vital PHC team members, establish role *contribution* by measuring value-added effects in care delivery, and develop role *alliances* to enable strategic capacity in PHC improvements. In addition, the data revealed stories about NP practice, which served as indicators of role integration. These five dimensions and related indicators formed the

Table 1 ***NP Role Integration in PHC Framework***

Dimensions	**Partners**	**Practice Indicators**	**Program Indicators**	**System Indicators**
Role autonomy	Management leadership	NPs enabled to assess client/population needs and service gaps and to design responsive role	NPs enact full scope in delivery of relevant practice and programs	Practice policies and procedures modified to enable NPs to deliver effective care
Role recognition	Clients and communities	Clients understand and utilize NP role; client confidence/satisfaction in holistic health promoting care	Communities utilize NP programs; service access increased to marginalized populations	Public awareness and recognition of NP role, including public awareness campaigns
Role inclusion	Intra- and interprofessional colleagues	Informal and formal team-building strategies to improve NP and team experiences	Team modifications to enhance NP role value; additional team requests for NP roles	Utilization of the NP role by PHC network and intersectoral partners
Role contribution	Researchers and evaluators	Increased NP participation in practice, research, and evaluation	Surveillance systems to track client care, program results, and value-added effects	Instruments and tools to measure and produce evidence of NP health outcome contributions
Role alliance	Organization stewards and policy leaders	NPs engaged in and contributing to local practice innovations	NP representation in health program/HA strategic planning	NPs and their organizations participate in provincial and national initiatives

basis of the NP Role Integration in PHC Framework, as outlined in Table 1.

Role Autonomy

The NPs noted the importance of building collaborative relations with site managers and HA leaders to achieve role autonomy and fully enact the scope of practice within their various positions and settings. Role autonomy enabled the NPs to determine client population needs, identify gaps in care, and design their practice and programs accordingly. It meant that the NPs had the flexibility to determine the best use of their expertise and time. One NP said:

> *Each day is different. I have some days set aside strictly for clinical . . . yesterday I was at the Aboriginal centre . . . then another day it's paperwork, meetings . . . then I might have another day when I'm travelling somewhere to do a clinic . . . so each day is different!*

However, the clinic schedules of a few NPs left little time for the upstream work of health promotion and care innovation. Within the groups, NPs spoke of ways to preserve flexibility and fluidity in order to provide responsive care and address health-care inequities. The absence of regional policies and procedures created tensions for some of the NPs; for instance, referral forms still stated "most responsible physician," practice guidelines referenced only the role of physicians, and electronic health records and billing codes did not adequately reflect NP practice. The freedom of NPs to assess client/population needs and design responsive practice was an indicator of autonomy, as were policies and procedures to support the effectiveness of NP practices.

Role Recognition

NPs discussed collaborating with clients and the community to provide holistic health promoting care, increase care access, and address health gaps among marginalized populations. By combining advanced clinical practice with health promotion and preventive education strategies, holistic health promoting care contributed to NP role clarity. One NP stated:

> *NPs focus their practice [on] particular client health conditions, populations, et cetera. I think the whole concept of wellness and health promotion is something that's really important in what we do, because we bring that into every client encounter and interaction.*

NPs also gave examples of community partnerships that enhance holistic care, such as outreach clinics, group client visits, and women's wellness and screening services. As clients and communities used the services of NPs, role recognition was acquired. The following indicators were noted: client understanding of and confidence in NP holistic health promoting care, community utilization of NP programs, and public awareness of the NP role — a public awareness campaign was mentioned as a strategy for increasing overall public recognition.

Role Inclusion

NPs saw collaboration as foundational to their everyday nursing practice. They discussed collaboration and team-building strategies as ways to foster role inclusion within their various team settings. For the NPs, role inclusion meant that they were perceived as vital team members who made a real difference to the quality of care provided by the team. One NP shared a comment made by a physician:

> *A physician said, "Can you chat with us? [I am seeing] a patient who has diabetes, poorly controlled . . ." At lunchtime the physician said, "That was so good . . . that makes my day. Like, everything else could go wrong today, but that interaction we had [together] with that patient was so good."*

The NPs also discussed collaborating with a range of practitioners and resources in order to plan and coordinate complex patient care. In fostering informal team-sharing of client information and facilitating broader formal case reviews, NPs cultivated relationships within their teams and across professions and sectors, thus strengthening their role as essential team members. Role-inclusion indicators identified were team-building to improve NP and team experiences, team modifications to enhance the value of the NP role, and utilization of the NP role by the PHC network and intersectoral partners.

Role Contribution

NPs acknowledged the importance of collaborating with researchers and evaluators to capture NPs' unique value-added contributions to client and community care. However, the lack of tools and resources to measure NP contributions presented a real challenge. One NP reported fewer emergency room visits and hospital admissions from her clinic, which was attributed to having an NP; however, this was viewed as anecdotal evidence only. Another NP commented:

> *You're not going to see what I do tomorrow, but hopefully you'll be able to see [it] in 10 to 20 years, when people are healthier, not smoking, exercising, and doing our health screening.*

NPs expressed concern about the lack of tools to track and measure their advanced nursing practice. Billing codes used to track clinical services did not fully capture the holistic care provided to clients and communities through health preventive education and harm-reduction services. Collaboration with research partners would thus help NPs to produce evidence of their contributions. Indictors identified were increased NP participation in research and evaluation; design of surveillance systems to track client care, program results, and value-added effects; and design of instruments and tools to measure NPs' contribution to health outcomes.

Role Alliance

NPs spoke of collaborating with local and provincial stewards and leaders to foster role alliances and thus more effectively participate in practice innovations, health improvements, and policy initiatives. They discussed how to attain status as a "go to" group with political power, so that their expertise would be sought after and they would be included in strategic policy initiatives. Mentorship by policy leaders was identified as a way to increase leadership capacity and advance political aspirations. Yet not all NPs had political interests:

> *We're in our infancy. We're only 64 bodies. It's hard to spread all that work out amongst only 64 people. So I think we'll get there, and those people will step up who have a stronger political interest; however, some [NPs] aren't really interested in the politics . . . that doesn't fit for all of us.*

Cultivating role alliances was seen as essential for role integration. Indicators included NP involvement in local practice innovations, NP representation in HA organizational planning, and participation of NPs and their organizations in provincial and national strategic initiatives.

Knowledge Transfer: Application of the Role Integration in PHC Framework

PAR constructs inquiry as a dynamic process to encourage a high degree of participation, in which members are co-researchers, co-learners, and co-activists (Reason & Bradbury, 2001). The credibility of our results is measured by enhanced social relations; generated education and knowledge; actions to improve practice, policies, and systems; application of results to the local setting; and knowledge transfer for enduring outcomes and wider applicability (Herr & Anderson, 2005). The results are made evident here by the two NP co-authors who apply the NP Role Integration in PHC Framework to assess their unique positions and thus determine their role status and the dimensions that require improvement for successful role integration.

Discussion: NP Collaboration and the Politics of PHC

This study focused on the how collaboration serves to advance NP role integration, because collaboration was known to be a key enabler of team-based care and role integration was seen to occur in team settings. Recent research, however, has depicted collaboration as multilevel and complex (Canadian Health Services Research Foundation, 2007; World Health Organization [WHO], 2008, 2010). The results substantiate this broader view of collaboration. The discussions revealed role integration to be inextricably linked to collaborative relations and initiatives at practice, program, and system levels. To achieve role integration, NPs developed collaborative relations, at these multiple levels, with managers, clients and community, colleagues, researchers, and policy leaders. Advancing role integration required NPs to cultivate partners at all levels of the health-care system and to be well grounded in the dynamics of change in order to navigate the power and politics of PHC reform (Burgess & Purkis, in press).

The NP role in PHC is decidedly political, because it represents a new way of delivering PHC to clients and communities. The NP is the first formal profession to be adopted by Canada's provinces/territories to augment physician primary care, and has significance for the realization of team-based PHC. The World Health Organization (2008) has reframed the work of Alma Ata (WHO, 1978) to highlight PHC reforms that emphasize health access, equity, and social justice; socially relevant and responsive services; collaboration of public health and primary care; and participatory leadership. The NP role is well positioned to align with WHO reforms (Browne & Tarlier, 2008; WHO, 2010). However, government and health-system commitment to comprehensive PHC and integrated health teams is at times questionable. Reticence can be analyzed as power relations, where patriarchal health systems limit public participation, organizational hierarchies constrain practitioner involvement, and traditional protective disciplines confine collaborative relations (Burgess & Purkis, in press; McDonald & McIntyre, 2010). The NP role sparks conflicts and controversies associated with PHC reform, because it contests traditional primary care services and is a catalyst for holistic health promoting care. Assessment of NP role integration is thus valuable for monitoring both advancement of the NP role and progress of PHC reform. Further research is needed to explicate these political implications.

Validation and Limitations

Validation criteria were derived from Hall's (2001) PAR definition to evaluate the quality and integrity of the study. The social investigation opened up communicative space for NPs to collectively investigate their experiences and foster more democratic relations (Reason & Bradbury, 2001). Education was constituted as NP stories that fostered learning and theorizing of the NP world, and thereby co-conceptualized collaboration in everyday worklife (Reason, 2006). Action enabled NPs to generate a meaning for role integration, articulate steps forward, and gain confidence in co-constructing role sustainability (Bradbury & Reason, 2001). Through discussion of power relations, NPs came to realize the importance of cultivating strategic capacity; thus the emergent nature of PAR created potential for enduring consequences.

The credibility of PAR is enhanced by managing the unexpected and taking a study's limitations into account (Reason, 2006). The HA with the more longstanding CoP actively helped to recruit NPs; as a result, the study groups were not equally represented and this may have compromised comparative analysis. Both the newness of the NP role and the limited experience of NPs in the politics of the role may have constrained dialogue. The study was centred on the NP role in PHC and was specific to the health-care context in British Columbia, which may limit its generalizability; according to Friedman (2001), however, knowledge can be applied as a template for evaluating similarities and differences, and thus can be translated for broader application.

Conclusion: Potential for Broad Use

The NP Role Integration in PHC Framework outlines dimensions of role integration and provides a tool for NPs to self-assess role integration within their own unique practice settings. The framework could be developed further as an evaluation instrument for policy leaders, decision-makers, and researchers to determine the status of NP role integration within a health-care setting or area and to identify deficiencies and strategies for role advancement. The discussion of NP collaboration as multilevel and complex and the NP role as politically significant for PHC reform illustrate the need to make collaboration everyone's business in order for NP role integration to be realized. Because NP collaborative processes are not yet fully understood and NP role integration in Canada is still uncertain, further research in these areas is indicated.

References

Almost, J., & Laschinger, H. (2002). Workplace empowerment, collaborative work relationships, and job strain in nurse practitioners. *Journal of the American Academy of Nurse Practitioners, 14*(9), 408–420.

Bradbury, H., & Reason, P. (2001). Conclusion: Broadening the bandwidth of validity: Issues and choice-points for improving the quality of action research. In P. Reason & H. Bradbury (Eds.), *Handbook of action research: Participative inquiry and practice* (pp. 447–455). London: Sage.

Browne, A., & Tarlier, D. (2008). Examining the potential of nurse practitioners from a critical social justice perspective. *Nursing Inquiry, 15*(2), 83–93.

Bryant-Lukosius, D., DiCenso, A., Browne, G., & Pinelli, J. (2004). Advanced practice nursing roles: Development, implementation and evaluation. *Journal of Advanced Nursing, 48*(5), 519–529.

Burgess, J. (2006). Participatory action research: First-person perspectives of a graduate student. *Action Research, 4*(4), 419–437.

Burgess, J., & Purkis, M. (in press). The power and politics of collaboration in nurse practitioner role development. *Nursing Inquiry.*

Canadian Health Services Research Foundation. (2007). *Interprofessional collaboration and quality primary health care.* Retrieved May 15, 2008, from http://www.chsrf.ca/research_themes/documents/SynthesisReport_E_FINAL.pdf.

Canadian Nurses Association. (2006). *Nurse practitioners: The time is now.* Ottawa: Author. Retrieved July 21, 2008, from http://www.cnpi.ca/documents/pdf/Nurse_Practitioners_The_Time_is_Now_e.pdf.

Canadian Nurses Association. (2008). *Advanced nursing practice: A national framework.* Ottawa: Author. Retrieved July 15, 2008, from http://www.cna-aiic.ca/CNA/documents/pdf/publications/ANP_National_Framework_e.pdf.

Charmaz, K. (2005). Grounded theory in the 21st century: Applications for advancing social justice studies. In N. Denzin & Y. Lincoln (Eds.), *The Sage handbook of qualitative research* (3rd ed.) (pp. 507–536). London: Sage.

College of Registered Nurses of British Columbia. (2005). *A regulatory framework for nurse practitioners.* Vancouver: Author. Retrieved June 3, 2010, from http://www.crnbc.ca/downloads/NP_Regulatory_framework.pdf.

College of Registered Nurses of British Columbia. (2008). *Scopes of practice for nurse practitioners (family): Standards, limits, and conditions.* Vancouver: Author. Retrieved July 15, 2010, from http://www.crnbc.ca/downloads/424.pdf.

DiCenso, A., Auffrey, L., Bryant-Lukosius, D., Donald, F., Martin-Misener, R., Matthews, S., et al. (2007). Primary health care nurse practitioners in Canada. *Contemporary Nurse, 26,* 104–115.

DiCenso, A., & Matthews, S. (2005). *Report on the integration of primary health care nurse practitioners into the province of Ontario.* Toronto: Queen's Printer for Ontario. Retrieved July 16, 2010, from http://www.health.gov.on.ca/english/public/pub/ministry_reports/nurseprac03/exec_summ.pdf.

Friedman, V. (2001). Action science: Creating communities of inquiry in communities of practice. In P. Reason & H. Bradbury (Eds.), *Handbook of action research: Participative inquiry and practice* (pp. 159–170). London: Sage.

Haines, J. (1993). *The nurse practitioner: A discussion paper.* Retrieved March 15, 2008, from http://www.cnaiic.ca/_frames/search/searchframe.htm.

Hall, B. (2001). I wish this were a poem of practices of participatory research. In P. Reason & H. Bradbury (Eds.), *Handbook of action research: Participative inquiry and practice* (pp. 171–178). London: Sage.

Hall, P. (2005). Interprofessional teamwork: Professional cultures as barriers. *Journal of Interprofessional Care, 19*(Suppl 1), 188–196.

Herr, K., & Anderson, G. (2005). *The action research dissertation: A guide for students and faculty.* Thousand Oaks, CA: Sage.

Horrocks, S., Anderson, E., & Salisbury, C. (2002). Systematic review of whether nurse practitioners working in primary care can provide equivalent care to doctors. *British Medical Journal, 324*(7341), 819–823.

IBM Business Consulting Services. (2003). *Report on the integration of primary health care nurse practitioners into the province of Ontario: Final report.* 1-280. Retrieved July 3, 2010, from http://www.health.gov.on.ca/english/public/pub/ministry_reports/nurseprac03/np_report.pdf.

Jones, L., MacDonald, M., Schreiber, R., & Davis, L. (2005). *Exploring new roles for advanced nursing practice: A discussion paper.* Retrieved August 29, 2008, from http://cna-aiic.ca/CNA/documents/pdf/publications/Exploring_New_Roles_ANP-05_e.pdf.

Jones, L., & Way, D. (2004). *Canadian Nurse Practitioner Initiative: Literature review report. Delivering primary health care to Canadians: Nurse practitioners and physicians in collaboration.* Retrieved June 3, 2008, from http://206.191.29.104/documents/pdf/Models_of_Collaboration_Literature_Review_e.pdf

Mason, J. (2002). *Qualitative researching* (2nd ed.). Thousand Oaks, CA: Sage.

McDonald, C., & McIntyre, M. (2010). The nurse practitioner movement: Recurring issues. In M. McIntyre & C. McDonald (Eds.), *Realities of Canadian nursing: Professional, practice, and power issues* (2nd ed.) (pp. 16–26). Philadelphia: Lippincott Williams & Wilkins.

Ministry of Health Services. (2006). *Ministry of Health manual for nurse practitioners.* Retrieved July 16, 2010, from http://www.health.gov.bc.ca/msp/infoprac/np/s1-nurseprac_in_bc.pdf.

Pogue, P. (2007). The nurse practitioner role: Into the future. *Nursing Leadership, 20*(2), 34–38.

Reason, P. (2006). Choice and quality in action research practice. *Journal of Management Inquiry, 15*(2), 187–203.

Reason, P., & Bradbury, H. (2001). Introduction: Inquiry and participation in search of a world worthy of human aspiration. In P. Reason & H. Bradbury (Eds.), *Handbook of action research: Participative inquiry and practice* (pp. 1–14). London: Sage.

Reay, T., Golden-Biddle, K., & Germann, K. (2003). Challenges and leadership strategies for managers of nurse practitioners. *Journal of Nursing Management, 11*(6), 396–403.

Sawchenko, L. (2009). The Interior Health Nurse Practitioner Community of Practice: Facilitating NP integration in a Regional Health Authority. In A. LeMay (Ed.), *Communities of practice in health and social care* (pp. 28–35). Oxford: Basil Blackwell.

Schwandt, T. (2001). *Dictionary of qualitative inquiry* (2nd ed.). Thousand Oaks, CA: Sage.

Stevenson, L., & Sawchenko, L. (2010). Commentary. *Canadian Journal of Nursing Research, 42*(2), 17–18.

Wenger, E., McDermott, R., & Snyder, W. (2002). *Cultivating communities of practice.* Boston: Harvard Business School Press.

World Health Organization. (1978). *Primary health care: Report of the international conference on primary health care, Alma-Ata, USSR.* Geneva: Author.

World Health Organization. (2008). *The world health report: Primary health care now more than ever.* Retrieved July 15, 2010, from http://www.who.int/whr/2008/en/index.html.

World Health Organization. (2010). *Framework for action on interprofessional education and collaborative practice.* Retrieved July 15, 2010, from http://www.who.int/hrh/resources/framework_action/en/index.html.

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Judith Burgess, RN, PhD, is Director of Health Services, University of Victoria, British Columbia, Canada. Alietha Martin, RN, MN, FNP, CNeph(C), is Nurse Practitioner, Interior Health Renal Program, Kelowna, British Columbia. Wayne Senner, RN, BTsN, MN, FNP, is Family Nurse Practitioner in Thoracic Surgery, Kelowna General Hospital.

Appendix 1 *Assessments of NP Role Integration*

Alietha's Assessment

Role Autonomy

In October 2005, Alietha, educated and licensed in British Columbia as a Family Nurse Practitioner, began in a newly created role with the Renal Program. With management support, she assessed the gaps in renal care. By collaborating with providers in a program review, she prioritized patients with early stage chronic kidney disease (CKD) and determined that her renal expertise would be best utilized by complementing family physicians in primary care settings. With leadership support, she expanded her role to include renal outreach to urban and rural communities, including the use of telehealth technology. In all sites, she collaborates with family physicians and nephrologists in shared care of CKD patients. Alietha's actions to determine the needs of the renal patient population, design a responsive role with the support of management, and bring about program changes to enable her contributions indicate that she has achieved advanced role autonomy.

Role Recognition

For Alietha, chronic disease management, health promotion, and injury/illness prevention are key to holisic care. Discussion of immunizations, falls-reduction strategies, and medication safety are embedded in each patient encounter. The care that she provides is focused not simply on the kidneys but on all aspects of the patient's health and well-being. However, many patients, families, and care providers lack awareness and understanding of the NP role and this create challenges. Alietha commented:

> *Patients hear the language differently. Some patients hear family "practitioner" and think I am a physician. . . . other patients hear the word "nurse" practitioner and think I have just basic nursing skills.*

Alietha notes that new clients are mostly accepting of her role. Ongoing care fosters client understanding and satisfaction with her role in renal care. But there is still much educating to be done with local communities and the general public. Role recognition is hindered by the small number of NPs available to provide holistic care and the lack of public awareness about the NP role.

Role Inclusion

Alietha notes that collaboration with family physicians and nephrology specialists has slowly improved through shared care. Some sites and teams collaborate more effectively than others, which reinforces the need for efforts in this area. Alietha has engaged in opportunities to formally describe her unique role to key stakeholders, such as family physicians, nursing staff, the hospital board, and the provincial renal community. However, she feels that team collaboration and inclusion of the NP role require further attention to enhance NP role integration.

Role Contribution

Alietha was keen to be included in the PAR study and she asked to participate in publications. She is actively tracking client and program results and exploring ways to evaluate program effectiveness. Evidence of role integration could be strengthened by improved tools and measures to show her contributions to PHC outcomes in the CKD population she serves.

Role Alliance

Alietha has strategically aligned her role to local, regional, and provincial renal programs. Over 4 years, she has received consistent support from local nephrologists and organization leaders. The integration of the NP role into HA renal programs has influenced changes to the existing BC Provincial Renal Agency. For instance, the NP role has been included in the care-provider database and NP-followed renal patients are now part of renal program funding. From the perspective of strategic alliances, she is advancing well in role integration.

Overall, Alietha remarked that these first 4 years of role development have been a time of tremendous growth and learning for her and many others. She commented:

> *I have really enjoyed the autonomy and flexibility to design my role around the needs of the community and my own expertise. Integration of my role into the existing health-care system has not been without its challenges, but I really believe it has been well worth the effort in terms of narrowing the gap in health care for British Columbians.*

Wayne's Assessment

Role Autonomy

Wayne was also educated and registered in British Columbia as an NP. He accepted a new position in 2008 in the Thoracic Surgery Program. The thoracic surgeons had lobbied for an NP who could provide primary care and chronic care continuity to patients with acute illness. The surgeons were delighted with Wayne's vast family practice experience in chronic care and facilitated his further learning of thoracic and radiology procedures through daily patient rounds, conferences, and linking with other thoracic programs. Wayne's autonomy was initially limited due to a lack of understanding of the NP role and the complexity of the specialty. By cultivating collaborative relations with surgeons, unit leaders, and other providers, as well as demonstrating a high standard of care and motivation to learn, he secured the trust of these stakeholders. Wayne's unique role in assessing the chronic care needs of acutely ill patients, navigating acute and PHC systems, and providing advanced nursing care has resulted in surgeons and unit staff modifying daily routines and policies to accommodate the NP role. He has achieved moderate role autonomy.

Role Recognition

Wayne has gained the competence to deliver holistic care to patients and their families. Clients accept and understand the NP role because they are prepared for a "team approach" from the outset. The surgeons explain, in their consultation with new patients, that once admitted to hospital they will be attended to by four thoracic surgeons and an NP who coordinates primary care and chronic health issues, along with unit staff to provide acute care. The NP care coordination gives clients an increased sense of security and confidence. The surgeons are keen advocates of NPs and publicly speak about their collaborative approach, although public awareness of the NP role is not yet evident.

Role Inclusion

Wayne sees acutely ill patients several times a day, first during rounds to deal with immediate surgical or chronic health needs and later to discuss a new diagnosis, meet with family members, provide discharge teaching, or consult with staff on managing co-morbid conditions. He notes:

> *Thoracic surgeons do not need to see their patients daily after surgery if all health and post-operative issues can be managed by an NP. In reality, issues such as hypertension, diabetes, heart disease, or smoking cessation, which are often associated with this patient population, are more appropriately left to providers who can provide a holistic approach and [make a] greater impact.*

Wayne's presence has enhanced team capacity. He and the surgeons meet each day to review the critical care needs of patients and draw up care plans. He is present in the thoracic unit on a daily basis, to complete team rounds, support decision-making, and provide education to staff, patients, and families; he is considered a vital team member. Through his direct and ready access to the thoracic surgeons, he mediates relations between the surgeons and the staff and has become a conduit for interdisciplinary management of the urgent and chronic needs of patients. Wayne has achieved role inclusion and is consulted by others in surgical and PHC networks.

Role Contribution

Wayne understands the importance of documenting his value-added contributions in order to advance role integration. He notes that there is early evidence in this program of NP role benefits to patients, mentoring of other staff, and savings to the system; however, this needs formalized measurement to determine NP health outcome contributions.

Role Alliance

Wayne has cultivated strategic alliances with the thoracic surgeons to develop a new NP role in which the acute and primary care needs of clients are holistically addressed. He has HA leader support and is recognized for innovations in advancing the NP role. His role success has elicited the interest of other specialist programs, the British Columbia Medical Association, and nursing leaders, indicating that role alliance is well advanced.

A surgeon commented:

> *We have changed the culture of care in our facility. The success of the Thoracic Surgery Program, the NP integration, and the impact on staff and patient care are evident, as every service (vascular, cardiology, orthopedics, hospitalists) has expressed interest in collaborative care and integrating an NP into their service for primary care. This is significant not only in terms of benefits to patient care but also for cost containment and savings to the system.*

Résumé

L'autonomie du secteur bénévole relativement à l'évaluation des programmes de santé publique : une exploration, selon la perspective d'une coalition pour le VIH/sida

Hélène Laperrière

Tel que recommandé par la Charte d'Ottawa, les agences gouvernementales canadiennes s'appuient sur les organismes communautaires pour mettre en œuvre des programmes de santé publique fédéraux à l'échelle locale. L'imposition aux organismes communautaires d'un rôle prédéfini les obligeant à fournir des services est un enjeu central. La logique hiérarchique descendante qui régit les pratiques structurées en promotion de la santé constitue un problème important pour les services infirmiers de santé publique. L'auteure réalise une analyse réflexive, ancrée dans le cadre de la colonisation interne pour explorer le cas d'un programme de santé publique canadien et ses liens avec une coalition provinciale d'organisations bénévoles travaillant sur des questions relatives au sida. La mise en vigueur de la Charte d'Ottawa met en lumière les défis liés à l'interprétation et aux actions inhérentes à la notion de partenariat entre les agences de santé publique et les organismes communautaires bénévoles. La notion de participation suggère la mise en place d'organismes sociaux plus démocratiques et égalitaires, avec des structures hiérarchiques basées sur une vision plus large d'une société moderne.

Mots clés : promotion de la santé, santé publique

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Autonomy of the Volunteer Sector in the Evaluation of Public Health Programs: An Exploration From the Perspective of an HIV/AIDS Coalition

Hélène Laperrière

As recommended in the Ottawa Charter, Canadian government agencies are counting on the involvement of grassroots organizations to implement federal public health programs at the local level. At issue is the forced acceptance by community organizations of the predefined role of suppliers of services. Because of the top-down issues of health promotion practice, the problem is crucial for public health nursing. The author uses reflexive analysis, grounded in the internal colonization framework, to explore the case of a Canadian public health program and its relations with a provincial coalition of volunteer organizations working on AIDS issues. Implementing the Ottawa Charter highlights the challenges of the meanings and actions inherent in the notion of partnership between public agencies and community organizations of volunteers. Participation suggests more democratic and egalitarian social organizations, with hierarchical structures in a broader image of a modern society.

Keywords: AIDS/immune system, Community Health Nursing, health promotion, population health, psychometrics and evaluation, public health

Introduction

The Ottawa Charter (World Health Organization [WHO], 1986) and the Bangkok Charter (WHO, 2006) oriented regional AIDS Community Action Programs (ACAPs) towards cooperating with civil society and the public and private sectors to include an economic development perspective within health promotion practices. This movement in the health sector follows the prescription, by the World Bank and the United Nations Development Program (UNAIDS/UNDP/WB, 2006), of inter-sector cooperation and local responses. In line with those recommendations, the New Canadian National Strategy on HIV/AIDS advocates for the mobilization of local community organizations (Canadian Public Health Association, 2006). The federal initiative is aimed at increasing engagement with the volunteer, professional, and private sectors as well as people living with and vulnerable to HIV/AIDS by choosing "long relationships with Non-profit Organizations and community partners" (Public Health Agency of Canada [PHAC], 2007).

Within the National HIV/AIDS Voluntary Sector Response Fund, ACAP finances more than one hundred community-based AIDS groups across the country (PHAC, 2006). It supports community-based organizations (CBOs) in "delivering HIV/AIDS prevention education, creating supportive environments for those infected with and affected by HIV/AIDS" and health promotion (PHAC, 2009). The federal initiative is guided by three policies: partnership and engagement, integration, and accountability (PHAC, 2007). The decision to finance a project by an HIV/AIDS CBO is directly influenced by the inclusion of these three policies in its proposal.

A participatory research study was conducted in cooperation with CBOs affiliated with a provincial coalition in Canada, to better understand the tensions, caused by evaluation, between HIV/AIDS CBOs (volunteer sector) and the regional ACAP (public sector). The study took place over a 2-year period, with collective discussions and sustained volunteer work among people living with HIV/AIDS. The in-depth participatory character of the research meant that each actor was invited to take part at all stages of the research process, including planning and evaluation.

The Problem

The research fostered reflexive analysis to generate insights into the socio-historical process of developing and evaluating public health programs. The theoretical background for the study was provided by Latin-American studies of internal colonization as a critique of "programmed development." Programmed development puts forward an abstract model of a "modern" society that assumes the right to impose itself on any culture that does not meet its standards (Casanova, 2002). In public health, programmed development means that the context of action is taken for granted in the proposed program; it is up to the local setting to comply with the imposed standards. In programs, planning, evaluation, and intervention logic is organized to facilitate the analysis of all of its components from the perspective of the managerial actor; formalization leaves little room for intuition and emerging strategies (Mintzberg, 1994). The study explored a broader problem in public health philosophy and programming approaches (Rose, 1992) when government public health initiatives involve volunteers. In order to mobilize the volunteer sector, "programmed actions," such as described in this article as general aims and actions to be followed in all local experiences, are often transmitted using language taken from the Ottawa Charter (WHO, 1986), such as "partnership," "participation," and "empowerment."

More and more, education in public health nursing is taking a program evaluation approach based on the Logic Model (Budgen, Cameron, & Bartfay, 2010; Edwards, Etowa, & Kennedy, 2008). Mintzberg (1994) sets out three premises of the Planning School Model with regard to strategy. First, strategic action should be controlled as well as being part of a formalized and elaborated process, broken down into steps, each delineated by checklists and supported by techniques. Second, responsibility for the overall process rests with the chief executive. Third, strategies emerge from this process fully developed, typically as generic positions to be explained so they can then be implemented. Mintzberg emphasizes the possible costs to those who must adhere to these guidelines.

There have been few critical examinations of the top-down issues in health promotion practice with "objective centralized and institutionally controlled set of criteria" (Potvin & McQueen, 2008, p. 28). It is crucial to analyze the pervasive presence of vertical relations of control in the use of the Logic Model for public health nursing practices that require local participation. A centralized, top-down hierarchical strategy of implementation clearly threatens to crush the logic of local participation and empowerment and make the program the victim of its contradictory logic.

Analysis of this problem is crucial for a genuine partnership with the volunteer sector in public health nursing. There should be clearer differentiation between participation (free participatory engagement) and recruitment of community volunteers asked to execute a particular health promotion action in a pre-established framework. The vertical relations of control place public health nurses in a bureaucratic grid of planning and evaluating, which is foreign to the lay people who are appointed to implement change in their community and causes misunderstanding of ends and means. This article offers a new way of viewing partnership and participation as set out in the Ottawa Charter, by calling for respect for the autonomy of community groups consisting of lay volunteers.

The Nature of Partnerships Between Civil Society and Public Health Institutions

Participatory rhetoric in the health-care system goes back to the 1960s (Albrecht, Fitzpatrick, Scrimshaw, & White, 2000). In 1978 the Alma Ata declaration pointed clearly to public participation: "The people have the right and duty to participate individually and collectively in the planning and implementation of their health care" (WHO, 1978). In 1986 the

Ottawa Charter underlined the strengthening and empowerment of communities through increased participation (WHO, 1986). Furthermore, a globalized world required public-private partnerships and the establishment of alliances (UNAIDS/UNDP/WB, 2006; WHO, 2006) — even though traditional approaches to public health programming and evaluation are often at odds with these aims (Gendron, 2001; Mantoura, Gendron, & Potvin, 2007; McQueen, 2001; McQueen & Anderson, 2000; Pluye, Potvin, & Denis, 2004). Glouberman (2001) stresses that hierarchical, top-down approaches still prevail in political decision-making in health planning, in a process that is heavily influenced by competition and the interaction of multiple interests. Official documents on health promotion are not clear on the nature of the partnerships that are expected to result. For example, the National Program of Public Health (Gouvernement du Québec, 2002) aims for collective empowerment but is unclear about actions to be encouraged or discouraged, such as militancy and political strategizing by social movements.

Ideological ambiguities increase the friction among partners; moreover, when public health decision-makers control the gathering of information civil society is often the loser in the hierarchical struggle (Hamel, 1993; International Council of AIDS Services Organizations, 2006; Potvin, Gendron, Bilodeau, & Chabot, 2005; Public Health Watch, 2006). Public health agencies call for pre-defined objectives, linearity, and predictability in their programs, while community development requires an ability to deal with uncertainty (Labonté, 1994). Boutilier, Cleverly, and Labonté (2000) underline the powerlessness of community actors and lay participants, in clear contradiction of the Ottawa Charter, since public health agencies have a tendency to subordinate civil society participation to demands for detailed technical forms.

Over the years, many health promotion researchers have supported a more active role for the community (Altman, 1995; Bracht & Gleason, 1990; Minkler, Wallerstein, & Hall, 2008; Novotny & Healton, 1995; Wallerstein & Bernstein, 1988). Nevertheless, the unilateral form of the protocol, the financing, and the lack of interest by planners in the local context weaken the avowed orientation (Burton, 2009; Cargo, Salsberg, Delormier, Desrosiers, & Macaulay, 2006; Israel, Eng, Schulz, Parker, & Satcher, 2005; Potvin, Bilodeau, & Gendron, 2008; Syme, 1997). Volunteering in Quebec is based on a model of collective responsibility that is quite different from the individual philanthropy prevalent in English Canada:

> In Quebec, the Church was the prototype for the organization of the community sector. . . . In the popular imagination in Quebec, what becomes historically salient is the collective responsibility of communi-

> ties, in contrast to an emphasis on altruistic acts by individuals [in positions of power]. The Quiet Revolution of the 1960s preserved this ethos in order to replace the Church with the modern state. In the famous words of [Premier] Lesage in 1961: "We do not have the luxury of underutilizing the state." (White, 2001, p. 2; author's translation)

Methodology

Field Research Approach

The field research approach adheres to non-linear, multi-method, flexible methodology (Becker, 1963; Quivy & Campenhoudt, 2006). In methodological pragmatism, the research process does not derive from a preconceived action model but evolves according to field events and retroaction by the participants. Questions evolve continually according to the fieldwork in an iterative process between theory and empirical inputs (Quivy & Campenhoudt, 2006). A purposive sample was made up of five diverse groups selected collectively by the 37 members of the coalition. Four sources of information were used on a continuum between direct action and intellectual organization: a critical review of the literature; collective discussions with actors from community organizations as a device for reflexive practice; direct participation in developing and testing evaluation tools; and volunteer work with the community organizations.

The Voluntary Fieldwork Experience of the Researcher

The researcher's participation as a regular volunteer for the community group became necessary in order to ensure proximity and relations of trust. It allowed for discussion of everyday topics in which participants wanted to be assured of confidentiality. The amount of work this required of the researcher was equal to that of an anthropological fieldworker (Borneman & Abdellah, 2009). A total of 427 hours spread over 20 months of fieldwork included 105 visits linked to volunteer activities and 29 visits linked to other activities, such as participation in four coalition general assemblies and attendance at collective and provincial network meetings and at a HIV/CBO conference. During the course of this work, the researcher spoke with people living with HIV, parents, friends, volunteers, interveners, CBO members, coordinators, representatives of funding agencies, federal public health agents, HIV/AIDS researchers, and coalition board members. The conversations took place in a variety of settings, such as bars, corridors, cafés, sidewalks, and CBO centres. In addition to those interviewed collectively as part of the more structured research process, approximately two hundred persons were contacted.

Data Collection and Analysis

The research process began with word-of-mouth among coalition members. Thirteen collective interviews were conducted in urban, semi-urban, urban-rural, and metropolitan regions (47 participants). The interviews focused on collective actions among people living with HIV/AIDS and possible ways of evaluating actions at the local level: How to bridge the distance between funding sources, the requirements of abstract models of evaluation, and the real operating conditions of community groups?

The coalition tool Strategic Analysis of Strengths and Weaknesses (Zúñiga & Luly, 2005) was used to explore the collective reconstruction of the community group's history (experiences, competencies, routines, fieldwork) in order to visualize the "project" as a realistic projection into the future. The original project constantly interacted with the concrete possibilities emerging in the action process. It looked at internal relationships (organizational dynamics, atmosphere of cooperation, administrative control, forms of participation, etc.) and external relationships (interpersonal dynamics, information, contacts, alliances, network, etc.).

The gathering and analysis of data from the collective interviews took place simultaneously during the fieldwork. Continued presence in the field allowed for early presentation of the results to coalition participants (first within member groups and then at general assemblies). The meanings that emerged from the data were tested for plausibility and factual grounding.

All results were analyzed and summarized by the researcher and then presented in draft form to the participants in all five groups. Discussion followed and the participants were asked to read the notes, comment on the analysis, and suggest further interpretations. Their opinions were added, so that the analysis included the viewpoints of all participants. The participants decided which results should be made available externally. The final conclusions were presented at a coalition general assembly.

Reflexive Analysis

A number of factors emerged from the collective interviews. These included: (a) the relative autonomy of the decision-making process, (b) recognition of different levels of participation in negotiating objectives and conditions of success, (c) the impact of inequalities on evaluation outcomes, (d) the cultural diversity of inter-organizational partnership settings, and (e) the presence of internal colonization. These specific conclusions are reported elsewhere (Laperrière, 2009a, 2009b).

Data from collective interviews cannot be treated outside the political and social contexts of the communication (Markova, 2003). The settings of HIV/AIDS prevention interventions reflect the structural realities of the local CBO organizational culture. Given the physical proximity of identifiable individuals living with HIV/AIDS and the political militancy of CBOs, the issue of privacy was of paramount concern. Threatening topics required a fine balance between ensuring trust and incorporating the opinions and viewpoints of all participants. It was mutually agreed that private information shared between the researcher and the participants would be kept private; this created a space for unguarded mutual trust within the formal collective interviews.

Schön and Rein's (1994) strategy of "reflecting in action" was crucial in order to analyze conflicts underlying controversies about policies, programs, and government projects. Schön and Rein see policy positions as "underlying structures of belief, perception, and appreciation," which they call "frames" (p. 23) and which must become explicit in order to lead to better understanding and cooperation of all actors involved. As the field research evolved, insights gave rise to questions relevant for public health nursing, such as: To what extent do the health promotion strategies contained in the Ottawa Charter promote control and autonomy by local communities? Do these strategies concern those members of community organizations who are volunteers engaged in transformative action? How can volunteer organizations, as autonomous actors, fulfil the mission that the Ottawa Charter has expressly assigned to them, a mission that considers the need to have their input as a reality-check, one that will make the planning strategy one in which the original plan is understood, enriched, and modified in order to meet the realistic criterion of turning the affected population into willing partners?

Findings

The findings concern the thematic insights derived from the collective reflexive analysis developed throughout the research process. They emerge between the fieldwork and the theoretical background.

Evaluation Conflict Between the Coalition and Public Health Agencies as a Collision of Frames of Understanding

Historically, the coalition has negotiated the space to adopt its own perspective on evaluation and produce its own evaluation tools (Jalbert, Pinault, Renaud, & Zúñiga, 1997). Between 2003 and 2005, interveners representing the coalition's HIV/AIDS CBO members developed 19 tools. The evaluation guide was aimed at increasing mutual understanding in terms of efforts both to better communicate and to better understand the issues under evaluation in such a way that partners would be aware of the differences in perspectives and the strategies in order to better understand and respect those of their partners. Financed by the AIDS community action program of Canada Health, the work was negotiated and supervised by five representatives of public health funding agencies.

During the research with the coalition, the federal agency hired a private firm to set operational criteria for the distribution of federal funding under ACAP. The external evaluator stated explicitly that the aim was to achieve a high degree of comparability among all volunteer organizations in Canada (PHAC, 2006). It recommended concentrating on evidence-based indicators to determine the distribution of funds among AIDS community action programs. The federal funding agencies accepted this comparison model.

The operational premise of ACAP and the chosen evaluation model test the logic of equal partnership. The federal program has adopted an integrative approach among different partners at the local, national, and global levels, aimed at "coherent action" by "peoples, organizations and systems involved with HIV/AIDS" (PHAC, 2009). Little space is left for exploration of the characteristics of a particular setting; no space is left for different peoples and organizations to better understand their inevitable partners.

Changes in the Perspectives of Participants

An "internal colonization" interpretation gradually emerged from the critical discourse. Some participants saw the HIV/AIDS CBO organizational culture as one of internal self-censorship. Self-censorship begins when community organizations surrender their autonomy for the sake of assured funding. In meetings among group members and in coalition meetings, participants said they felt they silenced themselves even before the federal agent asked them to omit certain details from the evaluative annual report. Such omissions obliterated from the text significant local knowledge that did not fit the objectives of the federal program.

After the "honeymoon" stage of sharing what was significant for the community participants, one group expressed discomfort with the "community manner of evaluating." The threatened accountability criteria were stifling the free expression of opinion. The participants spoke of an underlying ethical dilemma: "Should we respond to requests for information by federal agents on their terms or according to the needs expressed by community members?" "Why are our volunteers, some of whom are living with AIDS, expected to work with these programs?" "Should we be asking volunteers to put the aims of the program before their own needs?" Some members had drifted away from their original mission to help people living with AIDS to fit in projects that emerged sporadically from new national health policies. For others, the benefits of secure funding led to unquestioning acceptance of the imposed criteria and thereby threatened the very survival of the group.

Using the Results to Reframe Health Promotion Concepts

The literature on international relations uses the terms "colonization" and "internal colonization" to illustrate the dynamics involved in subordinating peoples and countries to a dominant nation and having local elites act as willing local multipliers of the values and practices of that nation. Colonization is "the relation of dependence — economic, political and cultural — imposed by one society on another" (Akoun & Ansart, 1999, p. 87). "Internal colonization" refers to the changes in perspectives and attitudes of sectors of the dependent society that are closest to the external influences (for example, cultural brokers, community leaders, intermediaries). Convinced of the benefits of the new model of national development, they gradually distance themselves from local values and practices.

The notion of internal colonization as described by Casanova (2002) suggests a merging of the values disseminated through socialization and the power differential implicit in this dissemination. The notion of internal colonization suggests a calm, peaceful movement towards "something better," with no apparent aim other than progress and the increased well-being of the population.

In the dynamics of internal colonization, popular organizations are not physically forced to change. This was particularly clear at one point in the research with HIV/AIDS CBOs. In group discussions, the questions that were developed collectively evolved in a way that the participants called "realistic," "down to earth," from "What do we think of our actions?" to "What do they want to hear from us? We'd better think before we sign a contract with the Queen!" (Laperrière, 2009a) (all Canadian government publications, including those setting out public health policies and programs, are the copyright of Her Majesty the Queen).

Attitudes were transformed through a complex process of "seeing the light," as per the program's stated objectives. In the process of internal colonization, members of CBOs might suddenly envisage the benefits of the socio-economic resources offered, or devise a personal strategy to profit from the connection with the "powerful" public health agency.

As a volunteer with HIV/AIDS CBOs, the researcher uncovered a complex typology of unpaid activities such as conviviality, care, social support, accompaniment of complex-care HIV/AIDS patients, what was called "festive networking" (to differentiate it from social networking), political militancy, fundraising, and participation in evaluation (Laperrière, 2009a). These activities were not included in formal evaluations and were actively discouraged in official evaluation grids. The question arises: Must one choose between answering to federal health authorities and answering to community members?

Sharock and Iedema (2004) argue that most health promotion theorists, notwithstanding their modernization aims, engage in an "evolutionary transcendent discourse." This discourse makes it impossible to question the official historical vision of health. In the view of Sharock and Iedema, development is conceptualized as rational, progressive, cumulative, and functional. Societal values can nevertheless influence choices regarding knowledge production and dissemination methods, which become instruments for instituting local health practices (Laperrière, 2008). This dissemination opens the way for new paradigms that are unfamiliar to local volunteers. It presents the volunteers with new dilemmas in adhering to health promotion guidelines.

Health promoters do this in the name of developing national public health policies. CBOs are expected to adapt to modern society, conscious of the principles of social justice, equality, and democracy. These values derive from the historical context out of which the Ottawa Charter emerged (Kickbusch, 2003). According to Petersen and Lupton (1996), modernizing conceptions of health promotion are reinforced through the use of terms such as participation and empowerment. This does not alter the political desire to orient community action towards the objectives of health authorities — in the hope of creating a better future society.

The Participation of CBOs in Representative Democracy

In political systems such as Canada's, to participate means only to be consulted or to be free to express one's opinion. This kind of participation does not include sharing in a project's design, administration, or evaluation. Hamel and Jouve (2006) distinguish between representative and participative democracy in terms of individual preferences and aspirations; in representative democracy, the collective choice is expressed in one representative voice, whereas in participative democracy each citizen can express his preferences and make his voice heard, free of frameworks, procedures, and institutions.

As a generic concept, participation encompasses three different meanings. One speaks of *communicative participation* when people participate in an activity or social event that they value and identify with (e.g., a concert, a patriotic act, a celebration). It creates a feeling of "we," of sharing and belonging. *Deliberative participation* includes the right to express a point of view or make a proposal (House & Howe, 1999). The vast majority of self-described democratic governments provide mechanisms by which members of the public can express their views, such as opinion polls and opportunities to give feedback by telephone or via electronic media. Finally, in the much more demanding *decisional participation,* individuals or groups assume the right to be considered an integral part of a decision-making collective. This conflation of meanings leads to ambiguities — for example, any contact between the researcher and the targeted subjects, including presentation of the project in order to obtain the consent of targeted subjects, can come under the participation label.

Decisional participation is a major challenge for representative democracies and public health systems (including public health nursing). "Participation is an ethical and political term that amounts to . . . conferring individuals with the power to concretely influence, and therefore change, the conditions that affect them" (Zask, 2003, p. 23; author's translation). Only the more restrictive decisional participation encompasses the full political and democratic act of participation. This was the meaning agreed upon by the participants in the present study.

Building a Participatory Action Model for Public Health Nursing

The culture of public health nursing generally seeks to involve volunteer organizations in order to achieve optimal *efficiency* (economic factor measurement) with respect to federal programs. The use of the volunteer sector in government programs limits the definition of "efficacy" to explicit, predetermined objectives defined in the absence of those who are meant to implement them and those who are meant to benefit from them (Potvin et al., 2008). In addition, efficacy is reduced to its definition by public agencies, marginalizing its meaning to the concrete interests of local communities.

Public health nurses are often encouraged to introduce programmed activities in CBOs as an obvious benefit. Unquestioning implementation by the volunteer sector nevertheless implies the subtle replacement of the local community (civil society) mission with a societal (government) mission. The spirit of support among CBOs will gradually be replaced by "networking" linked to a government agency. This mechanism promotes the consolidation of undifferentiated national public health programs in a form of internal colonization, by federal institutions, of local community groups (volunteer sector). There are built-in inequalities between those who define the programs (public health agencies) and those who are expected to implement them — the volunteer sector (civil society). Those inequalities will widen if health promoters, including public health nurses, do not take into account the harmful effects of prescribed or forcefully suggested actions on the lives of volunteers.

Conclusion

Public health philosophy has historically been directly related to the expansionist dissemination of concepts such as change and development, which prevailed in the 1960s and 1970s. In political decision-making structures and the planning of national agencies, volunteer activities are seen primarily as means to implement public health policies. The process of strengthening community actions (WHO, 1986), which is significantly influenced by the social movements of the 1980s (Kickbusch, 2003), paradoxically entails the rejection of engagements that are considered outdated such as militancy and the favouring of new beliefs in programmatic practices.

A vertical conception of the scientific dissemination of imported change through the participation of volunteers carries costs for public health programs, such as limited acceptance by the population and limited effectiveness. The verticality of public health programs can increase domination and minimize peer exchange and voices emerging from the grassroots. The volunteer activities that are permitted (financed) are controlled and measured according to supposedly universal dynamics and equally universal indicators — at the cost of prolonging or even obstructing the emergence of context-specific projects. The challenge of attaining convergence of public programming and popular participation is still unclear. Shedding light on it will certainly increase the likelihood of achieving the cooperation that is both desirable and necessary.

References

Akoun, A., & Ansart, P. (1999). *Dictionnaire de sociologie*. Paris: Robert/Seuil.

Albrecht, G., Fitzpatrick, R., Scrimshaw, S. C., & White, D. (2000). Consumer and community participation: A reassessment of process, impact and value. In G. Albrecht, R. Fitzpatrick, & S. C. Scrimshaw (Eds.), *The handbook of social studies in health and medicine* (pp. 465–480). London: Sage.

Altman, D. G. (1995). Sustaining interventions in community systems: On the relationship between researchers and communities. *Health Psychology, 14*(6), 526–536.

Becker, H. (1963). *Outsiders: Studies in the sociology of deviance*. New York: Free Press.

Borneman, J., & Abdellah, H. (2009). *Being there: The fieldwork encounter and the making of truth*. Berkeley: University of California Press.

Boutilier, M., Cleverly, S., & Labonté, R. (2000). Community as a setting for health promotion. In B. Poland, I. Rootman, & L. Green (Eds.), *Settings for health promotion* (pp. 250–278). New York: Sage.

Bracht, N., & Gleason, J. (1990). Strategies and structures for citizen partnerships. In N. Bracht (Ed.), *Health promotion at the community level* (pp. 109–124). Newbury Park, CA: Sage.

Budgen, C., Cameron, G., & Bartfay, W. J. (2010). Program planning, implementation, and evaluation. In J. E. Hitchcock, P. E. Schubert, S. A. Thomas, & W. J. Bartfay (Eds.), *Community health nursing: Caring in action* (pp. 284–324). Toronto: Nelson Education.

Burton, P. (2009). Conceptual, theoretical and practical issues in measuring the benefits of public participation. *Evaluation, 15*(3), 263–284.

Callon, M., Lascoumes, P., & Barthe, Y. (2001). *Agir dans un monde incertain.* Paris: Seuil.

Canadian Public Health Association. (2006). *Leading together: Canada takes action on HIV/AIDS (2005–2010).* Ottawa: Author. Retrieved September 7, 2009, from http://www.leadingtogether.ca.

Cargo, M., Salsberg, J., Delormier, T., Desrosiers, S., & Macaulay, A. C. (2006). Understanding the social context of school health promotion program implementation. *Health Education, 106*(2), 85–97.

Casanova, P. G. (2002). *Exploração, colonialismo e luta pela democracia na América Latina* [Exploration, colonialism, and the fight for democracy in Latin America]. Petrópolis, Brazil: Vozes.

Edwards, N. C., Etowa, J., & Kennedy, M. A. (2008). Community health planning, monitoring, and evaluation. In L. L. Stamler & L. Yiu (Eds.), *Community health nursing. A Canadian perspective* (2nd ed.) (pp. 212–226). Toronto: Prentice Hall.

Gendron, S. (2001). *La pratique participative en santé publique : l'émergence d'un paradigm.* Unpublished doctoral dissertation, Department of Social and Preventive Medicine, Faculty of Medicine, Université de Montréal. Retrieved March 9, 2011, from http://www.theses.umontreal.ca/theses/nouv/gendron_s/these.pdf.

Glouberman, S. (2001). *Towards a new perspective on health policy.* CPRN study H/03. Ottawa: Canadian Policy Research Networks.

Gouvernement du Québec. (2002). *Programme national de santé publique 2003–2012.* Quebec: Ministère de la Santé et des Services Sociaux.

Hamel, P. (1993). Contrôle ou changement social à l'heure du partenariat. *Sociologie et Societies, 25*(1), 173–187.

Hamel, P., & Jouve, B. (2006). *Un modèle québécois? Gouvernance et participation dans la gestion publique.* Montreal: Presses de l'Université de Montréal.

House, E. R., & Howe, K. R. (1999). *Values in evaluation and social research.* Thousand Oaks, CA: Sage.

International Council of AIDS Services Organizations. (2006). *Suivi et evaluation au niveau communautaire : mise en oeuvre de la declaration d'engagement de l'UNGASS sur le VIH/sida.* Retrieved December 10, 2010, from http://www.icaso.org/publications/UNGASS_comm_me_Fr.pdf.

Israel, B. A., Eng, E., Schulz, A. J., Parker, E. A., & Satcher, D. (2005). *Methods in community-based participatory research for health.* San Francisco: Jossey-Bass.

Jalbert, Y., Pinault, L., Renaud, G., & Zúñiga, R. (1997). *Epsilon: A self-evaluation guide for community organizations.* [English adaptation by D. Buckley-Couvrette.] Montreal: Coalition des Organismes Communautaires Québécois de la Lutte Contre le Sida.

Kickbusch, I. (2003). The contribution of the World Health Organization to a new public health and health promotion. *American Journal of Public Health, 93*(3), 383–388.

Labonté, R. (1994). Death of program, birth of metaphor: The development of health promotion in Canada. In A. Pederson, M. O'Neil, & I. Rootman (Eds.), *Health promotion in Canada: Provincial, national and international perspectives* (pp. 72–90). Toronto: Saunders.

Laperrière, H. (2008). Developing professional autonomy in advanced nursing practice: The critical analysis of sociopolitical variables. *International Journal of Nursing Practice, 14*(5), 391–397.

Laperrière, H. (2009a). Les inégalités entre le local et le national : le cas de l'évaluation qualitative de lutte communautaire contre le VIH/sida au Québec. *Recherches Qualitatives, 28*(3), 89–112. Retrieved March 9, 2011, from http://www.recherche-qualitative.qc.ca/volume28(3).html.

Laperrière, H. (2009b). Une pratique réflexive collective de production de connaissances dans la lutte communautaire contre le VIH/sida au Québec. Les inégalités entre le local et les centres d'expertises. *Nouvelles Pratiques Sociales, 22*(1), 77–91. Retrieved March 9, 2011, from http://id.erudit.org/iderudit/039661ar.

Mantoura, P., Gendron, S., & Potvin, L. (2007). Participatory research in public health: Creating innovative alliances for health. *Health and Place, 13,* 440–451.

Markova, I. (2003). Les focus groups. In S. Moscovici & F. Buschini (Eds.), *Les méthodes des sciences humaines* (pp. 241–242). Paris: Presses Universitaires de France.

McQueen, D.V. (2001). Strengthening the evidence base for health promotion. *Health Promotion International, 11,* 261–268.

McQueen, D.V., & Anderson, L. M. (2000). Données probantes et évaluation des programmes en promotion de la santé. *Ruptures: Revue Transdisciplinaire en Santé,* 7(1), 79–98.

Minkler, M., Wallerstein, N., & Hall, B. (Eds.). (2008). *Community-based participatory research for health* (2nd ed.). San Francisco: Jossey-Bass.

Mintzberg, H. (1994). *The rise and fall of strategic planning. Reconceiving roles for planning, plans, and planners.* Toronto: Free Press.

Novotny, T. E., & Healton, C. G. (1995). Research linkages between academia and public health practice. *American Journal of Preventive Medicine, 11,* 1–61.

Petersen, A., & Lupton, D. (1996). The healthy city. In A. Petersen & D. Lupton (Eds.), *The new public health: Health and self in the age of risk* (pp. 120–145). London: Sage.

Pluye, P., Potvin, L., & Denis, J.-L. (2004). Making public health programs last: Conceptualizing sustainability. *Evaluation and Program Planning, 27,* 121–133.

Potvin, L., Bilodeau, A., & Gendron, S. (2008). Trois défis pour l'évaluation en promotion de la santé. *Promotion and Education, 15*(Suppl 1), 17–21.

Potvin, L., Gendron, S., Bilodeau, A., & Chabot, P. (2005). Integrating social theory into public health practice. *American Journal of Public Health, 95,* 591–595.

Potvin, L., & McQueen, D.V. (2008). Practical dilemmas for health promotion evaluation. In L. Potvin & D.V. McQueen (Eds.), *Health promotion evaluation practices in the Americas* (pp. 25–45). New York: Springer.

Public Health Agency of Canada. (2006). *AIDS Community Action Program (ACAP) Grants and Contribution Allocation Project 2005: Final report.* Ottawa: Author. Retrieved September 7, 2009, from http://www.phac-aspc.gc.ca/aids-sida/publication/reports/acap-pacs/acap-pacs-eng.php.

Public Health Agency of Canada. (2007). *Three policy directions will guide federal action under the federal initiative.* Ottawa: Author. Retrieved September 7, 2009, from: http://www.phac-aspc.gc.ca/aids-sida/fi-if/index-eng.php.

Public Health Agency of Canada. (2009). *Federal initiatives to address HIV/AIDS in Canada: National funding.* Ottawa: Author. Retrieved September 7, 2009, from http://www.phac-aspc.gc.ca/aids-sida/funding/index-eng.php#chvi.

Public Health Watch. (2006). *Déclaration conjointe des organismes de la société civile.* Paris: Open Society Institute/Naturaprint.

Quivy, R., & Campenhoudt, L.V. (2006). *Manuel de recherche en sciences sociales* (3rd ed.). Paris: Dunod.

Rose, G. (1992). *The strategy of preventive medicine.* New York: Oxford University Press.

Schön, D. A., & Rein, M. (1994). *Frame reflection: Toward the resolution of intractable policy controversies.* New York: Basic Books.

Sharock, P., & Iedema, R. (2004). Ideology, philosophy, modernity and health promotion: Discourse analysis of eight reviews from *Reviews of Health Promotion and Education Online, 13.* Retrieved September 7, 2009, from http://rhpeo.net/reviews/2004/13/index.htm.

Syme, S. (1997). Individual vs. community interventions in public health practice: Some thoughts about a new approach. *VicHealth Newsletter, 1*(2), 2–9.

UNAIDS/UNDP/World Bank. (2006). *Multisectorial and local responses: Moving from implementation to measuring results.* Skills-Building Session, 16th International AIDS Conference, Toronto, August 13–18.

Wallerstein, N., & Bernstein, E. (1988). Empowerment education: Freire's ideas adapted to health education. *Health Education Quarterly, 15*(4), 379–394.

White, D. (2001). Maîtriser un movement, dompter une idéologie – l'État et le secteur communautaire au Québec. *Canadian Journal of Policy Research, 2*(2), 132–141.

World Health Organization. (1978). *Declaration of Alma-Ata.* International Conference on Primary Health Care, Alma-Ata, USSR, September 6–12. Retrieved December 10, 2010, from http://www.who.int/hpr/NPH/docs/declaration_almaata.pdf.

World Health Organization. (1986). *The Ottawa Charter for Health Promotion.* First International Conference on Health Promotion, Ottawa, November 21. Retrieved March 8, 2011, from http://www.who.int/healthpromotion/conferences/previous/ottawa/en/print.html.

World Health Organization. (2006). *The Bangkok Charter for Health Promotion in a Globalized World.* Retrieved January 8, 2011, from http://www.who.int/healthpromotion/conferences/6gchp/bangkok_charter/en/print.html.

Zask, J. (2003). La politique comme experimentation. [Preface.] In J. Dewey (Ed.), *Le public et ses problèmes* (pp. 7–43). Paris: Publications de l'Université de Pau Farrago/Éditions Léo Scheer.

Zúñiga, R., & Luly, M.-H. (2005). *Savoir-faire et savoir-dire : un guide d'évaluation communautaire.* Montreal: Coalition des Organismes Communautaires Québécois de la Lutte Contre le Sida.

Hélène Laperrière, RN, PhD, is Assistant Professor, School of Nursing, Faculty of Health Sciences, University of Ottawa, Ontario, Canada.

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Résumé

« Je ne peux pas imaginer ma vie sans ça! » Le curling et la promotion de la santé : une étude réalisée à l'aide de la méthode photovoix

Beverly D. Leipert, Robyn Plunkett, Donna Meagher-Stewart, Lynn Scruby, Heather Mair, Kevin B. Wamsley

Le curling est un sport très pratiqué dans les campagnes canadiennes, et nombre de femmes s'y adonnent. La santé des femmes en région rurale est plus à risque, comparativement à celle des femmes en milieu urbain, mais peu d'études se sont penchées sur les façons de promouvoir la santé de cette population. Cette étude examine l'influence du curling sur la santé des femmes des collectivités rurales. Un échantillonnage de 15 femmes et filles âgées de 12 à 72 ans et vivant dans deux communautés du sud-ouest de l'Ontario ont pris des photos, tenu un journal de bord et participé à deux rencontres en groupe pour discuter des effets du curling sur leur santé. Les résultats indiquent que le curling facilite les liens sociaux, améliore la santé physique et mentale, et constitue un soutien reconnu et visible en milieu rural. De toute évidence, le curling favorise, de façon significative, la santé et la vie collective des femmes de ce milieu. Il faudrait donc promouvoir davantage cette activité dans les collectivités rurales et étudier plus en profondeur la question du curling et de la santé des femmes dans ces communautés.

Mots clés : sport, curling, méthode photovoix

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"I Can't Imagine My Life Without It!" Curling and Health Promotion: A Photovoice Study

Beverly D. Leipert, Robyn Plunkett, Donna Meagher-Stewart, Lynn Scruby, Heather Mair, Kevin B. Wamsley

The sport of curling is an important activity in rural Canada, with many female participants. The health of women in rural Canada is much compromised compared to that of their urban counterparts, yet little research has explored ways to promote the health of rural women. This study examined the influence of curling on the health of women in rural Canada. A sample of 15 women and girls aged 12 to 72 from 2 communities in southwestern Ontario took pictures, kept logbooks, and participated in 2 group sessions to discuss the influence of curling on their health. The findings reveal that curling facilitates social connections, enhances physical and mental health, and provides a valued and visible way to support rural life. Clearly, curling promotes the health and community life of rural women in significant ways. More support for curling in rural settings is needed, and additional research on the topic of curling and the health of rural women is indicated.

Keywords: rural women's health, sport, curling, photovoice

Women are the backbone of rural communities, essential to ensuring their health and sustainability (Sutherns, McPhedran, & Haworth-Brockman, 2004). Rural women often carry a triple or quadruple workload as they care for families as well as infirm and older community members, are employed off and on the farm in economically struggling agricultural communities, and contribute to, and often sustain, rural organizations and activities (Coward et al., 2006; Kubik & Moore, 2003). As a result of these heavy commitments, rural women are often isolated from friends and relatives. Small and decreasing rural populations limit social supports, which can further contribute to a sense of isolation and to mental health issues (Canadian Institute for Health Information, 2006; Keating, 2008). Furthermore, limited resources in rural settings restrict women's ability to deal with health issues and promote their health (Leipert, 2010).

Engaging in recreation and team-sport activities may be one way for rural women to obtain practical, emotional, affirmational, and social support (Trussell & Shaw, 2007). As rural women tend to prefer social support and health advice that is provided by known others (Leipert &

George, 2008), the community contact afforded by curling clubs can increase access to social and other supports that advance the health of rural women, families, and communities.

While the role of sport and recreation in fostering social capital, health, and community development has been relatively well explored (Harvey, Levesque, & Donnelly, 2007; Seippel, 2006), the particular context of rural is much less studied. In one of the few studies of rural sports organizations, investigators in rural Australia found that sport and recreation were critical for community survival by providing "a sense of unity, by being a social leveler, by fostering a sense of trust, and contributing to social cohesion" (Townsend, Moore, & Mahoney, 2002, p. 4). Indeed, research into rural recreation has shown that "sporting clubs are usually the last organizations to fold in small declining communities, often lasting longer than local shops, pubs and churches" (Tonts, 2005, p. 142). Thus, despite demographic change and economic strain in rural areas, sport and recreation remain important. Benefits include opportunities for physical activity and social interaction, increased community pride, and a mentoring system for young and old alike to remain engaged (and residing) in rural communities (Mair, 2007, 2009). However, challenges such as the withdrawal of government support for sport and recreation have caused dramatic change, and responsibility for maintaining rural facilities has thus increasingly fallen on the shoulders of community members (Churchill, Plano Clark, Prochaska-Cue, Cresswell, & Ontai-Grzebik, 2007; Warner-Smith & Brown, 2002).

In addition, the role of recreation, leisure, and sport in the lives of rural women is dramatically understudied. A few researchers have explored rural women's involvement in sport and leisure and the extent to which their involvement has been shaped and limited by domestic roles such as child care and ideologies of wifehood, motherhood, and femininity (Aitcheson, 2003; Thompson, 1990). Thompson (1990) shows, for example, that women's traditional labours of cooking and cleaning are often transferred to sports facilities and clubs through the expectation that women will provide home-made foods for concession areas and social events. In addition, women's poorer access to funds and playing time, relative to men's, indicates that they may be less able to pay league fees for ice time and to have the time to curl due to child care and other family responsibilities. Thus the traditional gendered understandings and expectations of women and their roles typical of rural settings can result in limited sport options and experiences, with concomitant effects on women's physical, mental, and social health. However, exploration of rural women's health as a consequence of their experiences with sport in general and curling in particular is an area of research that has received virtually no attention.

This study focuses on the influence of curling clubs on rural women's health for four important reasons. First, assessing the specific case of rural curling clubs (more than 60% of Canada's curling clubs are located in communities with fewer than 10,000 people; Canadian Curling Association, 2004) provides a comprehensive snapshot of rural recreation activities across the country, a topic important for health and about which very little is known. Second, despite its long history in Canada (the first organized club in North America was the Montreal Curling Club, founded in 1807; Maxwell, 2002), few researchers have investigated the role of the curling club in small communities or the social and health aspects of the sport. Third, the study of curling is important in determining if and how factors such as lack of finances, an aging club membership, and volunteer burnout affect rural health (McConachie, 2007). Fourth, recent newspaper reports (e.g., McConachie, 2007) suggest the need to research the effect of factors such as decreasing numbers of rural women curlers and women's balancing of family and community responsibilities on their participation in the sport.

The purpose of the study was to (1) examine the influence of curling and curling clubs on the social lives and health of rural women using photovoice, (2) explore how curling activities and meanings differ for women across selected diverse rural settings in Canada, and (3) determine how sport and recreation are to be understood within the contexts of gender and community change in rural areas. This ongoing national project is being conducted in Nova Scotia, Ontario, Manitoba, and the North West Territories. The Ontario data are presented here; data from the other research sites will be published when available. In this study, a rural community is defined as a population living outside a municipality of 10,000 or more residents (du Plessis, Beshiri, & Bollman, 2002).

Method

The study was informed by social capital (Lauder, Reel, Farmer, & Griggs, 2006) and feminist concepts and approaches (Olesen, 2000). Social capital, by exploring the nature of associations that express trust and reciprocity, can facilitate community participation in health promotion activities and bridge divides between policy-makers, practitioners, and academics. A feminist approach informs an understanding of rural women's social lives and health in terms of power and control as these relate to personal and collective health, and the individual, sociocultural, economic, and contextual factors that influence health.

Design

Photovoice methods guided the design of the study. Photovoice, an innovative participatory qualitative research method that was originally designed for research with rural women (Wang, Burris, & Ping, 1996), gives study participants an opportunity to use cameras and logbooks to discuss information relevant to their communities and the study's purpose. Photovoice photographs can act as a catalyst for discussion, visually document situations that are difficult to describe (such as rural isolation), and promote the empathy and understanding ("A picture is worth a thousand words") that foster social change (Leipert, 2010; Wang & Burris, 1997).

Setting and Sample

Ethical approval was received from the University of Western Ontario. Women were recruited from curling clubs in two rural communities in southwestern Ontario selected for their extended distance from urban centres and their small populations. The two communities had populations of 1,200 and 3,000 and were more than an hour's drive, over isolated roads, from the nearest urban centre. Inclusion criteria were being female and being a present or past member of a curling club in a rural setting.

Data Collection

Participants provided written informed consent and then took part in picture-taking, logbook recording, and two group interview sessions in their community. Both sessions were audiorecorded. In the first, the orientation session, which lasted about 1 hour, each participant was given a disposable camera, received instructions in its use, and was requested to take pictures depicting roles played by curling clubs as sport and community places for rural women and how curling and curling clubs influence the health of rural women. Participants were asked to provide a Letter of Information to and obtain written consent from individuals whose pictures they wished to take. Each participant was also provided with a notebook to keep a log of what was photographed and any other data relevant to the study. One week after receiving these materials, participants were contacted to support progress. Logbooks and cameras were retrieved 2 weeks after distribution. Print and digital versions of the photographs were made for the researchers; duplicate prints were made for the participants.

In the second, 2-hour, group session, each participant selected from her own prints two pictures that represented the role and significance of curling and curling clubs for rural women's health and social life. These pictures formed the basis of the subsequent discussion. Participants were also asked to title the two pictures as a way of obtaining their meaning and significance. Probes encouraged elaboration and clarification by the photographer as well as by the other participants. At the end of the session, participants completed a brief sociodemographic survey.

Further data collection occurred as the researchers visited rural curling rinks and engaged in conversations about physical and sociocultural aspects of the rink, such as the roles of women and others, how the rink was used, and the effects of use on the social lives and health of rural women. These researcher observations and perspectives were recorded in field notes and included in the analysis.

Data Analysis

During the second group session, the participants took part in the analysis by selecting, contextualizing, and codifying their photographs (Wang, 1999). In selecting, participants choose to talk about the two pictures that they find most significant. In contextualizing, participants take a critical stance on their pictures based on the acronym SHOWeD: What do you *see* here? What is really *happening* here? How does this relate to *our* lives? *Why* does this facilitator or barrier exist? What can *we do* about it? In codifying, participants discuss "issues, themes, and theories that arise from their photographs" (Wang, 1999, p. 188).

Logbooks, audiorecordings of group sessions, and field notes were transcribed verbatim and then analyzed by a minimum of two researchers using a content analysis process (Patton, 2002). Line-by-line reviews were conducted to identify and code key words and phrases regarding roles that curling clubs play as sport and community places for women (e.g., women as curlers) and how curling clubs influence rural women's social lives (e.g., a place for socialization) and health (e.g., for recreation in winter). Themes and patterns were discovered within and across transcripts, participants, and the two settings. The qualitative computer program NVivo was used to assist with labelling and retrieving codes and themes during analysis (Ulin, Robinson, & Tolley, 2005). Descriptive statistics summarized the sociodemographic data.

The photographs were analyzed using a three-part procedure based on the work of Oliffe, Bottorff, Kelly, and Halpin (2008). In the first stage of analysis, *preview,* the researchers view participants' photographs along with the titles and narratives about each to understand intended representations and to situate participants within the context of their photographs. In the second stage, *cross-photo comparison,* the researchers develop themes that are reflected in the entire collection of photographs. In the final stage, *theorizing,* the researchers may develop abstract understandings by linking themes to the theoretical framework of the study.

Rigour and Trustworthiness

To ensure rigour and trustworthiness, (a) the group sessions were audiorecorded and transcribed verbatim; (b) transcribed data were edited to accurately represent the recorded data; (c) research themes were based on participants' perspectives, language, and pictures; (d) transcribed information and pictures were reviewed by a minimum of two investigators, to ensure interpretive rigour; and (e) an audit trail of raw data and analytical memos will be kept for a minimum of 7 years (Graneheim & Lundman, 2004).

Results

The sample comprised 15 girls and women aged 12 to 72. Three participants were aged 12 to 17, the majority (*n* = 8) being middle-aged (40–60 years; *n* = 6) or older (65 and 72 years; *n* = 2). Five participants lived on farms and 10 lived in one of the two towns that had populations of 1,200 and 3,000. Most were employed (*n* = 8). Curling experience ranged from less than 1 year (*n* = 1) to 16 years or more (*n* = 3), with the majority having curled 3 to 10 years (*n* = 8).

Participants took a total of 305 pictures. Analysis of these pictures and of the group and logbook transcripts gave rise to four themes related to the influence of and importance of curling for the health of rural women. Pseudonyms are used in the presentation of quotes by participants.

Facilitating Social Connections

The young women in the study said that curling fostered a sense of closeness with teammates and other women. One of the participants termed her teammates her "curling family." Another young participant stated that the rink was like a "second home" due to the acceptance and support she felt there.

Curling also provided a rare opportunity for participants to connect with other women and men in the community. Mary, a woman in her thirties with four young children, said she looked forward to her weekly curling match as a way to connect with adults. "For women with little children in the house," she explained, "between changing diapers, picking up after them, runny noses, bottles, colic time et cetera, it feels great to get out and have a more stimulating conversation." Mary also valued curling as "a great bonding [opportunity] for women . . . one of the rare times rural women socialize with other adults on a personal level." These comments and the accompanying pictures reveal some of the traditional roles, such as primary child-care provider, that rural women still often play, and their valuing of the limited opportunities in small rural communities for social engagement, particularly with women.

The value of curling in offering opportunities for social interaction and camaraderie among the women and between the women and men curlers, who were often the participants' husbands and partners, was also evident in the titles and logbook comments. Curling provided opportunities to interact before games, as teams gathered and chatted, and after games, when teams took part in the curling tradition of having a beverage together after a match. For participants who were employed, curling was also often a valued opportunity to share with their husbands and partners an enjoyable social experience. Laura explained: "Curling has been a great way for my fiancé and I to spend time together. We are both really busy with our jobs, but we look forward to Tuesday nights as a chance to get out of the house and have some fun away from work."

In addition, curling on a weekly basis fostered not only closeness with partners but also connections with the community. Christine noted, "My husband's not from the community and didn't know anyone here . . . curling is the . . . way he got to know people in the community." Laura, also new to the area, explained how curling helped her and her partner to integrate into the community: "We play together, we volunteer together. We have social times after the games together. It's a great way to meet people as a new person to the community." Facilitating social connections was especially important for those who were new to the area and worked full time, often in distant locations, and thus had few opportunities to socialize locally and become involved.

The nature of curling, whereby players of all ages, abilities, and backgrounds are accepted and welcomed (Maxwell, 2002), fostered the acceptance and involvement that participants enjoyed, valued, and remarked on. For example, Jennifer, a senior curler, noted the value of "stick curling," where older players can use a stick to throw curling rocks, thus avoiding the need to bend down, which can be a problem with aging hips and knees. "[The stick] is a fabulous invention. I'm so excited about the stick because I know there's [some of that experience] down the road [for me]." Teresa, a coach with the youth programs, revealed that the inclusivity of curling extended to children and the lesser abled: "[There's] one little guy in our youth program . . . [who] doesn't have full mobility . . . he can't get down in the hack properly, so he sort of crouches, bent over, instead. But he's such a curling enthusiast." The inclusivity of curling was important in these rural communities, where populations were small and declining and where experience in the sport was varied. It fostered a sense of community and social cohesiveness, helping the small, isolated communities to remain viable.

Picture 1
Stick-Curling

Enhancing Physical and Mental Health

For several participants, their comments and emphatic tone of voice indicated that curling was vital to their mental and physical health in winter. Some participants described the physical exercises and stretching that they did to stay fit for the sport. One retired woman did 30 minutes of aerobics and 15 minutes of yoga daily to "keep [my] flexibility . . . and my muscles in shape for the rigours of curling . . . strong back, legs, and arms are important for curlers. . . . Most people find sports difficult in their senior years because they simply have not kept their bodies in shape."

For all participants, especially the middle-aged and older women who formed the majority of the sample, and who often form the majority of rural residents (Keating, 2008), enhancement of physical health was a clear benefit. Most rural communities have few sport and fitness resources. Although hockey is prevalent in many rural communities, it is not a sport that women tend to take up. In addition, getting outside for exercise during the long winter months, when ice and snow increase the risk of falling and being injured, is not appealing and is even impossible in inclement weather. Thus, the opportunities for physical exercise that curling affords were most welcome. "Curling really motivates me to keep in shape," said Jennifer. "It really does. It's a big motivator."

Curling enhanced participants' mental health by giving them something to look forward to and be engaged in during the cold, dark days of

Picture 2
Getting in Shape

winter. This is especially important in rural settings where activities are confined by small populations and limited amenities. Chloe, a 13-year-old participant, said that curling "keeps you entertained if you don't have anything to do." Grace, aged 72, explained that curling "gives you something to look forward to, and as you get older you have less and less of those things." Dolores was the mother of two teenage curlers who frequently took part in bonspiels (curling competitions) out of town: "If we didn't curl, I would go nowhere all winter long." These comments reveal that curling provides impetus to be active and involved in rural settings that offer few opportunities for interaction and involvement. In addition, curling gives women and families opportunities to curl in other communities, thereby widening the scope for social interaction and strengthening mental health.

In the larger of the two communities an improved economic situation and quality coaching for schoolboys led to competitive curling opportunities in other parts of the province. Participants noted the sense of pride that resulted when the home teams did well. Jennifer, aged 65, said, "I've curled for 40-some years, and to see what these young people [boys] can do in a short period of time is absolutely amazing." Amelia, a 17-year-old, was inspired by the curling successes: "Seeing that on the ice makes you think that one day we could actually be [at the Olympics]." Photos similar to picture 3 were taken by several participants. These, together with their comments, reveal how curling served as a facilitator of pride and accomplishment — past, present, and future.

Picture 3
Believing

Thus curling can promote women's health, affirm rural residents' pride and confidence in their community, and provide inspiration and hope for the future.

Providing a Valued and Visible Way to Support Rural Life

The participants in the study found value in contributing to their communities; they realized that in small, isolated places the contributions of everyone are needed to keep the community viable and to keep programs such as curling available. Thus they frequently discussed and took pictures depicting ways that their participation at curling rinks contributed to community life. For example, a few weeks earlier the smaller town in the study (pop. 1,200) had hosted a provincial youth bonspiel, and the women were instrumental in hosting and catering for over a hundred competitors and their friends, families, and coaches, as well as spectators. Dorothy, an elderly club member and active community volunteer, described her experience of the event: "I wish I [had]. . . kept track of how many hours I actually put in. I know one day it was . . . almost 14 hours, just in one day, and that wasn't even including any legwork that was done ahead of time . . . And that's only with one club, and I like to volunteer for a lot [of organizations]." For a club with only 17 female curlers, hosting this event was a significant accomplishment, and the participants were duly proud.

Participants also took on major responsibilities in managing the day-to-day life of the rink. For example, Jennifer championed and arranged

Picture 4 ***Community Life***

the Friday-night, teen, and other league events each week, and Teresa and her husband taught the Little Rocks program every Sunday so that young curlers could learn the sport. These were impressive commitments, especially since Teresa worked full time during the week, making a daily round-trip commute of 3 hours in wintry weather on country roads, and Jennifer was heavily involved in many other community activities. These women were sustained by their belief in curling for building and nurturing the quality of community life, as indicated in picture 4 and the following comments: "The curling club is such a big part of the community, especially in a small, rural town like ours" . . . "community is important for mental health" . . . "sense of belonging and sense of being part of something — and the curling club itself is a community" . . . "we play together, we volunteer together, we have social times."

Nonetheless, the participants' work at the rink added greatly to the substantial volunteer work they took on in the community, and it resulted in overextension and burnout for some. Mary was a novice curler and a mother of young children: "[In] a small town, sometimes volunteers are hard to come by, so some women volunteer in many organizations. This leaves little time for anything else."

Nevertheless, they wanted to keep the rink in their own community, in spite of challenges related to volunteering and a low rate of curling participation by community members. One study participant remarked, "Every community in the area . . . has a club. And everybody's struggling for members and financially, so it's sort of which club is going to last longer and maybe pick up a few more members when the club in [the other] town closes, if we can last longer than them. Which is really unfortunate." Carol, a frequent curler, cited one of the benefits of having a rink in her own town: "Well, if [the club is] in your town, you don't have to drive a lot. It's just convenient."

Clearly, participants were very committed to their communities and to curling. They realized that in small communities a high level of volunteering was necessary to sustain services and programs.

Curling as a Means of Enhancing the Health of Rural Women

Participants valued curling highly for its promotion of and enrichment of social, mental, and physical health. However, they said that curling required more support by schools, the community, and the club itself if it was to survive and thrive in rural settings.

The young participants in one of the communities noted that coaching in the local secondary school (grades 8 to 12) was limited and tended to favour the boys' curling teams. This focus on the boys' teams may have been related to the fact that the boys had been quite successful in bonspiels throughout the province; several participants took pictures of these events and commented on the successes. Although usually a coach for the girls was available, apparently coaching was taken less seriously for the girls than for the boys. Study participants explained that the girls' coaches did not require formal coaching experience or qualifications. Helen, the mother of a young female curler, revealed an ironic perception of the inadequacy of girls' coaching: "You just need a warm body, really."

Several women noted that learning to play in their youth helped them to continue curling, improve their skills, and return to the sport later in life. Mary was involved in the youth program, where several of her children played: "I think if there was more of a regular [youth] league . . . if boys and girls started younger and loved it, [it] would carry on to their adulthood." In addition, youth curling provides an opportunity for socializing, which is important in rural settings considering the lack of social and recreational amenities. Helen was the mother of two teenage curlers: "I think it's important for the kids because there's not much to do in town. We have no theatre. If you're not a hockey player . . . [you] can curl here every night of the week if [you] want, and then we do put [our son] in bonspiels . . . so we go away on weekends."

Thus participants believed that coaching is important for all youths, including girls, and should be taken seriously in schools, whether or not the youths are competitively successful in their curling endeavours. They felt that better coaching in schools would give curling, with all of its health benefits, a better future as a viable sport for rural communities.

Other factors also affected the viability of curling in the two settings, and further highlighted the need for curling support. Participants noted that curling and hockey were the two major sports in their communities and that hockey competed with curling for the time, money, and dedication of community members (especially parents). They said that hockey often won out, with parents and children spending more time at the hockey arena than at the curling rink. Dolores, a mother of two teenage curlers, said that curling "is not a high-profile sport — always second to hockey." In addition, the recent closure of a large factory had resulted in a loss of jobs and the movement of people out of the community. These losses of income and residents had lowered the number of people who could afford to or were available to curl. Furthermore, a community centre that had recently been built in the town offered indoor recreation facilities such as a weight room and a walking track; this appealed to many residents, both young and old.

As a result, participants in the study noted that curling club membership had been decreasing and therefore one club made the decision to reduce daytime curling hours. However, this decision served to reduce curling recruitment and retention, especially among older women, who liked to curl during the day. Recommended solutions included retaining the daytime schedule and seeking other sources of revenue such as local businesses or increasing membership fees. However, participants noted that raising fees might serve to exclude those with lower incomes, a growing issue in these communities. Teresa was a member of the club's executive: "We were talking about whether the fee increase . . . [is] going to be too much for . . . seniors . . . We don't want to lose seniors."

Participants also noted that more media coverage and celebration of curling activities and victories would help to support the sport. They compared the "overabundance" of local and national hockey reporting to the meagre coverage of curling events. Thirteen-year-old Chloe commented, "Hockey's promoted on, like, everything, on TV, anywhere . . . but they don't have anything for curling." A mother of young children noted, "You hear about the awesome hockey players in the NHL, and the kids look [up] to them . . . [This doesn't happen] so much in curling." Participants believed that local bonspiel winners should be given more prominence in local newspapers and schools, and that television should devote more coverage to curling events, especially women's events such as the annual national Scotties Tournament of Hearts. Girls' achievements should be acknowledged more as well, according to Amelia, a 17-year-old competitive curler: "Last year when [the boys] won all those things, they got put on the [school] announcements. When [the girls] won gold last year, it wasn't even on the announcements at all. [But] at least they [the boys] got . . . recognition." Participants saw local coverage of curling as symbolizing the valuing of rural achievements and as reflecting pride in and commitment to rural communities and ways of life.

In summary, participants valued curling as important to their health and the health of their communities. They not only curled but also committed substantial time, effort, and funds to the support and enrichment of their curling club. Although the women's commitments sometimes exceeded their resources, they nonetheless persisted in offering their services and looked for ways to further advance curling activities in their communities.

Strengths and Limitations

A strength of this study is its exploration of an important rural resource — the sport of curling — and the implications of this sport for the health of rural women and girls, which are understudied populations with many health challenges. A limitation of the study is that the research represents a small sample of women and girls in one Canadian province. We need more research in rural settings throughout Canada and in other curling countries to determine the health effects of and supports for curling among women and girls. Additional research methods, such as grounded theory, would facilitate our understanding of factors that affect curling among women and girls and the processes by which these two populations address issues and participate in curling to promote their health.

Discussion

There has been little research exploring the effects of curling — or any other sport or physical activity — on the health of rural women. This study provides important information, especially as the health of rural women is generally compromised and would significantly benefit from promotion activities (Leipert, 2005) and because curling is a popular sport in many rural settings (Maxwell, 2002). The results indicate that curling should be further developed as a health promotion resource for rural girls and women. Nurses, in their role as advocates, could help to promote curling in rural areas. In addition, similar to the participants in this study, nurses new to a rural community could participate in curling as a way to connect with and get to know the community, and vice versa (Best Start Resource Center, 2010).

However, several issues compromised the ability of the women in this study to benefit from the health promoting effects of curling. Work at home and in distant locations, the financial precariousness of many rural curling clubs, and the expectation of significant volunteering at the club and in the community limited the ability of some women to take up curling — and indeed limited their interest in doing so. The changing nature of rural work and rural populations (Kubik & Moore, 2003), limited community and club finances (Mair, 2007), and considerable volunteer work, especially by women (Petrzelka & Mannon, 2006), are common issues in rural settings. However, this study revealed that the smaller the community the greater the burden on club members to keep the club viable. For example, the smaller club had no manager or icemaker, so members took turns filling these roles, thus adding to their volunteer responsibilities. However, their volunteering did provide participants with opportunities for identity-building and for profiling themselves publicly. As the contributions of rural women are often invisible and taken for granted (Kubik & Moore, 2003; Leipert, 2005), these opportunities can be significant, yet care must be taken to ensure that extensive volunteering does not add to the exploitation of rural women's community commitment. In addition, participants noted that curling facilities are under-supported in small towns, which are dominated by hockey, a sport that women do not typically engage in. Given participants' valuing of curling as a health promotion activity, the participation of rural girls and women in the sport needs to be taken seriously and supported more effectively.

Small, under-populated rural communities often lack the resources to address these systemic issues in ways that advance women's health through curling. As with other issues related to women's health in rural settings, such as insufficient health promotion (Leipert, 2010) and treatment services (Sutherns et al., 2004), provincial and federal support is needed. In addition, local governments and provincial and national sports organizations, such as Sport Canada and the Canadian Curling Association, could give curling clubs the kind of support that is provided to other rural recreational facilities such as hockey arenas and community centres. Such support could help rural curling clubs to develop policies and practices while meeting expenses and providing a valuable community resource.

Although the women in this study usually took primary responsibility for gendered activities, such as planning, preparing, and serving meals and cleaning up after club events, men assisted with some of these activities, especially the obtaining and serving of food. This sharing across traditional gender roles is promising and may indicate changes in other responsibilities that have been traditionally gendered, such as child care. Further research is needed to explore if and how women are supported in taking on curling roles that have been associated with men, such as board membership, ice preparation, and coaching.

The study found both immediate and long-term health benefits of curling. Immediate benefits include increased social contact, which facilitates mental health, and opportunities for physical activity, which improves physical health. Long-term benefits include a lifelong interest in and active participation in the sport and opportunities for community pride and enhanced self-esteem through competition, such as in provincial bonspiels and even the Winter Olympics. For girls from small towns and farms especially, local inspirational opportunities are rare. Rural settings tend to be traditional in terms of gender expectations (O'Lynn, 2010); thus a future that veers from expectations could provide alternative ideas and options for rural girls. In other curling countries, young people are supported in curling high schools, called curling gymnasiums in Sweden (Katja Gillander Gadin, personal communication, May 8, 2010), where enriched coaching and curling opportunities serve to enhance competitive success and self-esteem. The development of enriched curling support in Canadian schools could also increase self-esteem and opportunities for girls in rural settings. More research in Canada and abroad, in countries such as Sweden, could deepen our understanding of how the mental and physical health of youths and women might be better promoted in rural curling contexts.

References

Aitcheson, C. (2003). *Gender and leisure: Social and cultural perspectives.* New York: Routledge.

Best Start Resource Centre. (2010). *How to reach rural populations.* Toronto: Author.

Canadian Curling Association. (2004). *Survey of Canadian curling facilities.* Retrieved July 28, 2010, from http://www.curling.ca/start-curling/profile-of-the-canadian-curler.

Canadian Institute for Health Information. (2006). *How healthy are rural Canadians? An assessment of their health status and health determinants.* Ottawa: Author.

Churchill, S., Plano Clark, V., Prochaska-Cue, K., Cresswell, J., & Ontai-Grzebik, L. (2007). How rural low-income families have fun: A grounded theory study. *Journal of Leisure Research, 39*(2), 271–294.

Coward, R., Davis, L., Gold, C., Smiciklas-Wright, H., Thorndyke, L., & Vondracek, F. (Eds.). (2006). *Rural women's health: Mental, behavioral, and physical issues.* New York: Springer.

du Plessis, V., Beshiri, R., & Bollman, R. (2002). Definitions of rural. *Rural and Small Town Canada Analysis Bulletin, 3*(3), 1–16.

Graneheim, U., & Lundman, B. (2004). Qualitative content analysis in nursing research: Concepts, procedures, and measures to achieve trustworthiness. *Nurses Education Today, 24,* 105–112.

Harvey, J., Levesque, M., & Donnelly, P. (2007). Sport volunteerism and social capital. *Sociology of Sport Journal, 24,* 206–223.

Keating, N. (Ed.). (2008). *Rural ageing: A good place to grow old?* Bristol: Policy Press.

Kubik, W., & Moore, R. (2003). Changing roles of Saskatchewan farm women: Qualitative and quantitative perspectives. In R. Blake & A. Nurse (Eds.), *The trajectories of rural life: New perspectives on rural Canada* (pp. 25–36). Regina: Saskatchewan Institute of Public Policy.

Lauder, W., Reel, S., Farmer, J., & Griggs, H. (2006). Social capital, rural nursing and rural nursing theory. *Nursing Inquiry, 13*(1), 73–79.

Leipert, B. (2005). Rural women's health in Canada: An overview and implications for policy and research. *Canadian Woman Studies, 24*(4), 109–116.

Leipert, B. (2010). Rural and remote women and resilience: Grounded theory and photovoice variations on a theme. In C. Winters & H. Lee (Eds.), *Rural nursing: Concepts, theory, and practice* (3rd ed.) (pp. 105–129). New York: Springer.

Leipert, B., & George, J. (2008). Determinants of rural women's health: A qualitative study in southwest Ontario. *Journal of Rural Health, 24*(2), 210–218.

Mair, H. (2007). Curling in Canada: From gathering place to international spectacle. *International Journal of Canadian Studies, 35,* 39–60.

Mair, H. (2009). Club life: Third place and shared leisure in rural Canada. *Leisure Sciences*, *31*(5), 450–465.

Maxwell, D. (2002). *Canada curls: The illustrated history of curling in Canada.* Toronto: Whitecap.

McConachie, D. (2007). Where have all the curlers gone? Continuing slide in numbers forces revision to women's playdowns. *StarPhoenix* (Saskatoon), December 22, B5.

Olesen, V. (2000). Feminisms and qualitative research at and into the millennium. In N. Denzin & Y. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed.) (pp. 215–255). London: Sage.

Oliffe, J., Bottorff, J., Kelly, M., & Halpin, M. (2008). Analyzing participant produced photographs from an ethnographic study of fatherhood and smoking. *Research in Nursing and Health, 31*(5), 529–539.

O'Lynn, C. (2010). Negotiation of constructed gender among rural male caregivers. In C. Winters & H. Lee (Eds.), *Rural nursing: Concepts, theory, and practice* (3rd ed.) (pp. 193–224). New York: Springer.

Patton, M. (2002). *Qualitative research and evaluation methods* (3rd ed.). London: Sage.

Petrzelka, P., & Mannon, S. (2006). Keepin' this little town going: Gender and volunteerism in rural America. *Gender and Society, 20*(2), 236–258.

Seippel, O. (2006). Sport and social capital. *ACTA Sociologica*, *49*(2), 169–183.

Sutherns, R, McPhedran, M., & Haworth-Brockman, M. (2004). *Rural, remote, and northern women's health: Policy and research directions.* Winnipeg: Prairie Centre of Excellence for Women's Health.

Thompson, S. (1990). "Thank the ladies for the plates": The incorporation of women into sport. *Leisure Studies, 9,* 136–143.

Tonts, M. (2005). Competitive sport and social capital in rural Australia. *Journal of Rural Studies, 21,* 137–149.

Townsend, M., Moore, J., & Mahoney, M. (2002). Playing their part: The role of physical activity and sport in sustaining the health and well being of small rural communities. *International Electronic Journal of Rural and Remote Health Research, Education, Policy and Practice, 2*(109). Retrieved July 18, 2008, from http://rrh.deakin.edu.au.

Trussell, D. E., & Shaw, S. M. (2007). Daddy's gone and he'll be back in October: Farm women's experiences of family leisure. *Journal of Leisure Research, 39*(2), 366–387.

Ulin, P., Robinson, E., & Tolley, E. (2005). *Qualitative methods in public health: A field guide for applied research.* San Francisco: Jossey-Bass.

Wang, C. (1999). Photovoice: A participatory action research strategy applied to women's health. *Journal of Women's Health, 8,* 185–192.

Wang, C., & Burris, M. (1997). Photovoice: Concept, methodology, and use for participatory needs assessment. *Health Education and Behavior, 24,* 369–387.

Wang, C., Burris, M., & Ping, X. (1996). Chinese village women as visual anthropologists: A participatory approach to reaching policy makers. *Social Science and Medicine, 42,* 1391–1400.

Warner-Smith, P., & Brown, P. (2002). "The town dictates what I do": The leisure, health and well-being of women in a small Australian county town. *Leisure Studies, 21,* 39–56.

Beverly D. Leipert, RN, PhD, is Associate Professor, Arthur Labatt School of Nursing, University of Western Ontario, London, Ontario, Canada. Robyn Plunkett, RN, MSN, is a PhD student in the Arthur Labatt School of Nursing, University of Western Ontario. Donna Meagher-Stewart, RN, PhD, is Associate Professor, School of Nursing, Dalhousie University, Halifax, Nova Scotia, Canada. Lynn Scruby, RN, PhD, is Assistant Professor, Faculty of Nursing, University of Manitoba, Winnipeg, Canada. Heather Mair, PhD, is Associate Professor, Department of Recreation and Leisure Studies, University of Waterloo, Ontario. Kevin B. Wamsley, PhD, is Professor and Associate Dean, Faculty of Health Sciences, University of Western Ontario.

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Résumé

Une exploration des réseaux sexuels : une étude pilote des comportements sexuels et du recours à des soins de santé chez les partouzeurs

Patrick O'Byrne, Jessica A. Watts

Il existe très peu de recherche scientifique sur les partouzeurs. Pour le personnel infirmier spécialisé en santé sexuelle, cette absence d'information peut s'avérer problématique, notamment dans un contexte où le taux d'ITS est à la hausse, partout au Canada. Une étude pilote a été entreprise pour explorer la sous-culture d'hommes et de femmes qui fréquentent les clubs de partouzeurs. Des données ont été recueillies à l'aide d'un questionnaire distribué dans un bar de partouzeurs, à deux occasions distinctes, et par la voie d'observations directes dans ces établissements, à ces deux mêmes occasions. Les chercheurs ont mené des observations directes pendant huit heures, et 72 individus (32 hommes et 40 femmes) ont rempli le questionnaire. Les répondants ont dit avoir des relations sexuelles non protégées — orales (80,3 %), vaginales (15,5 %) ou anales (30,8 %) — et ont rarement recours à des services de santé axés sur les ITS (<40,8 %). Selon les auteurs, de plus amples recherches doivent être menées pour explorer la possibilité de concevoir et de mettre en place des services de santé axés sur les ITS à l'intention des partouzeurs.

Mot clé : services de santé

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Exploring Sexual Networks: A Pilot Study of Swingers' Sexual Behaviour and Health-Care-Seeking Practices

Patrick O'Byrne, Jessica A. Watts

Very little scientific research exists about swingers. For sexual health nurses, this dearth of information may be problematic, particularly as the rates of many STIs are increasing across Canada. A pilot study was undertaken to explore the subculture of men and women who visit swingers' clubs. Data were collected through a survey distributed at 1 swingers' club on 2 separate occasions and through direct observation of the clubs on the same 2 occasions. The researchers engaged in 8 hours of direct observation and 72 individuals (32 men and 40 women) completed the survey. The respondents reported engaging in unprotected sex, whether oral (80.3%), vaginal (15.5%), or anal (30.8%), and rarely accessing STI health services (< 40.8%). The authors conclude that further research is needed to investigate the possible design and implementation of STI health services for swingers.

Keywords: community health nursing, health services, HIV, sexual and reproductive health

Introduction

Recently, swinging (i.e., male-female couples having sex with other individuals and/or couples as part of their relationship) has become a topic of interest in the field of sexually transmitted infection (STI) control. This is partly because research has linked swinging with elevated rates of gonorrhea, chlamydia, and syphilis transmission (Dukers-Muijers, Niekamp, Brouwers, & Hoebe, 2010; Simms et al., 2005) and partly because heterosexual transmission of STIs has increased among those aged 30 to 39 (Public Health Agency of Canada [PHAC], 2009).[1] Research about swinging from an STI perspective is sparse, which complicates the work of public health nurses seeking to decrease STI transmission. While the limited amount of data that are available suggest a link between swing-

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[1] While research has found elevated rates of STIs (i.e., gonorrhea, chlamydia, and syphilis) among swingers, no data exist on HIV. Moreover, the sexual orientation/age characteristics that are associated with swingers do not correspond with the groups that are most affected by HIV. Consequently, this research focused on STIs, not HIV.

ing and STI transmission, the evidence is not sufficient to identify how or why this relationship exists.

To address this knowledge gap, a pilot study was undertaken to generate information about (1) the sexual norms of one community of swingers, and (2) how and why these norms contribute to elevated rates of STI transmission. The study involved on-site observation and survey distribution during two swingers' events.

Current State of Knowledge

The Extant Literature on Swinging and Swingers

The majority of the research on swingers has focused on their sociodemographic and psychological characteristics. This work has revealed that swingers are often white, middle to upper class, conservative voters, and in their thirties (*range* = 28–45 years; *mean* = 40 years) (Jenks, 1998). Information regarding the prevalence of swingers, meanwhile, varies. While no research exists for Canada, it appears that 1% to 15% of all couples in the United States have tried swinging (Bartell, 1971; Cole & Spaniard, 1974; North America Swing Club Association [NASCA], 1997; Weiss, 1983). The variability of these numbers is partially explained by source: The 15% figure comes from a swinging association (NASCA, 1997), which based its statistics on couples who have ever tried swinging, while the more conservative 1% is from research studies with couples who swing on a regular basis (Bartell, 1971; Cole & Spaniard, 1974; Weiss, 1983). Moreover, because some of the research literature predates the NASCA report by nearly three decades, time could be a factor. While there may well be more swingers today, it could simply be that people who swing have become more likely to report the practice. NASCA supports the former supposition but there are no data confirming either.

Another factor that could affect the rates of swinging (by attracting either increased reporting or greater uptake of the practice) is that, in Canada, the legal status of swingers' clubs has recently changed. In 2005 the Supreme Court ruled, in R. v. Labaye, that the Government of Canada has no right to interfere with the practice of adults having consensual sex behind closed doors. This ruling modified the definition of public space and decency in Canada and legalized swingers' clubs (Markovic, 2006), and it could affect both the rates at which couples report swinging and the likelihood of people experimenting with this sexual lifestyle. Despite the potential ramifications of the legal change, however, the research dedicated to swinging continues to be sparse, particularly from an STI perspective.

More precisely, only four articles mention swingers and STIs, with the first two indicating that swingers are concerned about STIs and their fears sometimes affect their sex practices (Jenks, 1998; Murstein, Case, & Gunn, 1985). In the third article, Friedman and colleagues (2008) report on their study of group-sex events, including swingers' clubs. They conclude that sex clubs could facilitate rapid STI transmission because of the high rates of STI discordance among participants. The fourth article (Dukers-Muijers et al., 2010) confirms suspicions that swingers have elevated rates of STIs: Of 8,971 individuals in Holland who attended a free STI clinic between January 2007 and December 2008, those who self-identified as swingers were more likely than both sex-trade workers and men who have sex with men to test positive for gonorrhea, chlamydia, and syphilis ($p < 0.0001$); the individuals concerned were over 40 years of age. The authors of the study suggest that the heightened STI transmission was likely due to an increased number of sex partners, concurrent sexual partnerships, and low levels of condom use. While research has confirmed that these factors increase STI transmission (Garnett, 2008; Morris, Goudreau, & Moody, 2008), there has yet to be an exploration to determine the effects of these factors among swingers.

Problematically, awareness of the correspondence between swinging and STI transmission provides little information for the nurses whose job it is to help decrease the transmission of these infections. Assumptions are made about how and why swingers' sexual norms facilitate STI transmission (as in the 2010 Dutch study; Dukers-Muijers et al., 2010), but speculation is not a solid foundation for STI prevention work. Indeed, the public health literature indicates that many successful STI interventions are based on in-depth understandings of target-population norms (Global HIV Promotion Working Group, 2006); however, no such data exist about swingers — which indicates that the next step in knowledge generation on this topic is the development of clear understandings about swingers' cultural-level sexual norms.

STI Transmission

Because the goal of the pilot study was to understand STI transmission among a group of swingers, we provide an overview of the factors that affect such transmission. There are five main categories: (1) individual factors, (2) sexual-contact factors, (3) group factors, (4) ecological factors, and (5) infection factors. The first are factors that increase an individual's vulnerability to STI infection, independent of context, such as self-efficacy, personal knowledge about STIs, STI transmission, STI protection, and anatomical determinants/biological susceptibility.

The second group of factors are those that render a sexual contact more or less likely to transmit STI. They include: an individual and his/her sex partner(s)' number of different sex partners, their total number of sex contacts per partner, their relationship status with these partners, the gender of these partners, the STI diagnosis histories of the individual and his/her partners, the places where sex occurs/is arranged, the types of sex that occur, and the use of protective barriers.

The third category comprises the group factors that facilitate STI transmission in specific sexual networks, and thus that increase the likelihood that the members of a certain group will be exposed to STIs. These factors are as follows: the mean number of sex partners per person in the group, the group-level distribution of partners (i.e., a heterogeneous or "small world network" distribution), rates of concurrent sexual partnerships, group STI incidence/prevalence rates, rates of bridging between one group and others with higher incidence/prevalence rates, and age/sex distribution in the group.

The fourth category encompasses the macro-level (ecological) factors that affect STI transmission at the population level, such as availability of condoms and other protective devices; affordability/accessibility of STI testing/treatment services; public health STI policies (e.g., a harm-reduction versus an abstinence focus); social, legal, and religious stances on STIs; and gender-power social norms.

Lastly, different STIs have different degrees of transmissibility, depending on certain contextual parameters.[2] For example, gonorrhea and chlamydia, as site-specific bacterial infections, require direct contact between an infected anatomical site and a susceptible anatomical site, such as might occur in the case of unprotected penile-vaginal sex when one of the two sites is colonized by gonorrhea and/or chlamydia. By comparison, gonorrhea/chlamydia transmission cannot occur if a person with a rectal gonorrhea/chlamydia infection performs oral sex on his/her partner. Syphilis, meanwhile, is a blood-borne pathogen that permeates many body fluids. Consequently, once infection is established, sexual contacts that involve the exchange of body fluid (including saliva) can transmit this infection, regardless of the original site of infection. However, because the natural course of syphilis includes a latent period during which an individual is not infectious, transmission is time-dependent. Ultimately, such infection-specific transmission signals that determining STI transmission for an entire group is complex. Many factors influence this process.

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[2] Although sparse, the extant literature shows that swingers have elevated rates of gonorrhea, chlamydia, and syphilis. Consequently, only these three infections are discussed in any detail throughout this article.

Theoretical Framework: Sexual Script Theory

Gagnon and Simon's (2005) sexual script theory was used to ground the project. From an STI transmission perspective, such an approach was ideal because it provided a framework for examining STI transmission from the viewpoint of culture, group norms, and human interaction — and not exclusively the aforementioned factors that influence STI transmission. Consequently, sexual script theory was used to ensure that data collection both gathered information about STI transmission factors and remained sensitive to the importance of group norms and cultural mores. Because the study was aimed at understanding how the sexual norms of a specific group of swingers facilitate STI transmission, sexual script theory was the chosen framework.

A primary aspect of this theory is its rejection of the idea that sexual practices are expressions of a biological or psychological predisposition. In fact, sexual script theory holds that (consensual) sex transpires when the appropriate stage, actors, act, and performance occur in the required sequence. From this perspective, human sexuality is both inculcated in and specific to particular sociopolitical contexts. The cognitive schemata that individuals use to create their sexualities can therefore be understood as scripts that, through repetition and practice, become internalized and perfected. These scripts are the stories that give sexual meaning to many disparate but interrelated occurrences, actions, and people.

Gagnon and Simon (2005) also insist that these scripts function on different levels: cultural, interpersonal, and intrapsychic. The cultural level refers to the group norms that guide and structure sexual behaviour. While not concrete, cultural scripts provide the context within which individuals interpret people's behaviour. These scripts give meaning to otherwise inexplicable actions. The interpersonal level is less abstract. It is the process of self-observation by which individuals make sure that they respect/follow cultural norms. This level encapsulates people's self-policing to ensure a basic degree of alignment between their behaviour and social expectations. The intrapsychic level explains how individual variation arises when people take care to follow social dictates. At this level, people evaluate cultural norms and modify them based on personal values. This yields a number of personal interpretations and understandings about cultural sexual norms. There are as many intrapsychic scripts as there are people. Nevertheless, sexual script theory indicates that these individualized scripts contain common threads, which reveal the cultural-level scripts. Indeed, it is the commonalities among the multitude of unique intrapsychic scripts that reveal cultural norms (scripts). In-depth analyses of target groups can therefore both elucidate sexual norms and shed light on how and why they facilitate or affect STI transmission (when the latter point is a goal). In this context, the purpose was to specifically examine the cultural-level scripts/norms.

Methods

Design and Fieldwork Negotiation

This pilot study was a descriptive, non-experimental cross-sectional investigation that also involved direct observation. Data were gathered through the administration of surveys at one swingers' club on two separate occasions and through on-site observation of the swingers' club. The data-collection periods were separated by 1 calendar month because the venue was open once a week only and a national holiday fell during the data-collection period. The idea to observe a swingers' event and to administer surveys on-site during two time periods emerged from discussions with the owner of the club. The owner stated that a sophisticated understanding of swingers' clubs and their practices required on-site presence. He dismissed previous research as based on second-hand data collection about these venues. When the idea of direct observation and survey administration was presented, the owner immediately granted permission for on-site data collection and then notified his manager of the dates when this would take place.

Data Collection

The surveys were distributed on both dates to all those who arrived at the club between the hours of 8 p.m. and midnight. They were handed out in a main area adjacent to the front door. Each couple was approached, told the purpose and nature of the survey, and asked to participate. Those who voiced interest were given two copies of the survey (one in English, one in French), a pen, a clipboard, and a book light. They were instructed to complete the survey in their preferred language and to deposit the completed survey in a locked drop-box that was located near the researcher. The participants were informed that no identifying information would be gathered and that the survey data would not be reviewed until the following day. The surveys contained questions about demographics, sexual practices, and STI health-care-seeking behaviour. All survey questions had been validated in two studies: one on the sexual practices of men who attend circuit parties, the other with gay/bisexual men who visit bathhouses. This was the first time the survey was administered to heterosexual men and women.

The observation data, meanwhile, were gathered during the survey administration period. At the point when survey participants were being sought (i.e., upon their entrance to the club), each swinger was informed that direct observation was also taking place throughout the evening. The observation data served to enhance and explain the survey findings. To collect these data, field notes were taken about the venue, about people's behaviour, and about the interpersonal interactions between the men and women who were present at the swingers' club during the two data-collection periods. Other notes were taken to record interactions between the club patrons and the researcher. This involved contemporaneous note-taking on scraps of paper after interactions were completed.

Ethics

Ethics approval for the study was obtained from the Research Ethics Board at the University of Ottawa. Informed informed consent was obtained from all participants. The club owner was given a detailed description of the study, each survey participant was informed about the study and was required to read a description that accompanied the survey, and each person who entered the club was informed of the presence of a researcher who would be observing events.

Results

Observation Data

The swingers' club where the research was carried out was located in a mainly residential area of Ottawa, Canada, approximately 10 minutes by car from the city centre. The building was two storeys high and had no signs indicating that it was a swingers' club. Inside, the lighting on the first floor was very dim; clip-on book lights had to be provided so that the survey could be read. The layout of this floor was that of an urban martini lounge. There were tables and chairs where people congregated after entering the club to talk, dance, and drink water/soda beverages. Attached to this area were a service bar and an elevated dance floor. Participants reported, and observation confirmed, that alcohol consumption — particularly by the men — was limited. Informal discussions at the club revealed that the men did not want alcohol to impede their sexual performance. Drug use was neither reported nor observed. The men were dressed in slacks and buttoned-up shirts, the women in pants, dresses, or thematic clothes. No sexual contact occurred on this floor; it was the "cruising" area, where couples and groups met, interacted, and interviewed one another. Discussions often related to recent events (e.g., news topics) or to vacations, especially those at southern swingers' resorts. Interactions were consistent with the appearance of the club as a martini lounge for middle-aged, affluent, mostly white men and women.

On the second floor the decor and behaviour were different. The lighting was brighter, which enhanced visibility. In addition, while the space on the first floor was open-concept, here it was partitioned into six rooms: four bedrooms, a "living room," and a shower room. Each room contained an open box of lubricated condoms. Discussions about the bedrooms revealed that three of the four required an explicit invitation to enter if there were people already in the room. Newcomers waited at the door until someone in the room granted or denied them entry. In the fourth room, which was informally known as the "anything goes room," people could enter and join in a sexual encounter already in progress. No invitation was required. In all rooms, though, verbal negotiation did occur; that is, the participants often voiced what they wished to do or have done to them and others then accepted or declined their invitation. Male-male sexual contact was neither mentioned nor attempted by any of the participants. Discussions confirmed that this form of sexual contact was taboo. Other discussions revealed that while a typical sexual encounter involved many bodies, sex acts other than oral, vaginal, anal, or manual rarely occurred. Expulsion was the usual outcome when someone did venture to engage in other forms of sexual activity (e.g., urolagnia or sadomasochism).

No safer-sex information was posted or was immediately visible on either floor of the club.

Survey Data

In total, 101 individuals entered the swingers' club during the two data-collection periods, with 17 individuals entering on both nights. There were thus 84 discrete cases, of whom 72 (38 men, 34 women) completed surveys, for a response rate of 85.7%. Of the 12 swingers who did not participate in the research, four were French-speaking, eight were men, and all were Caucasian; no other data were gathered about the non-responders.

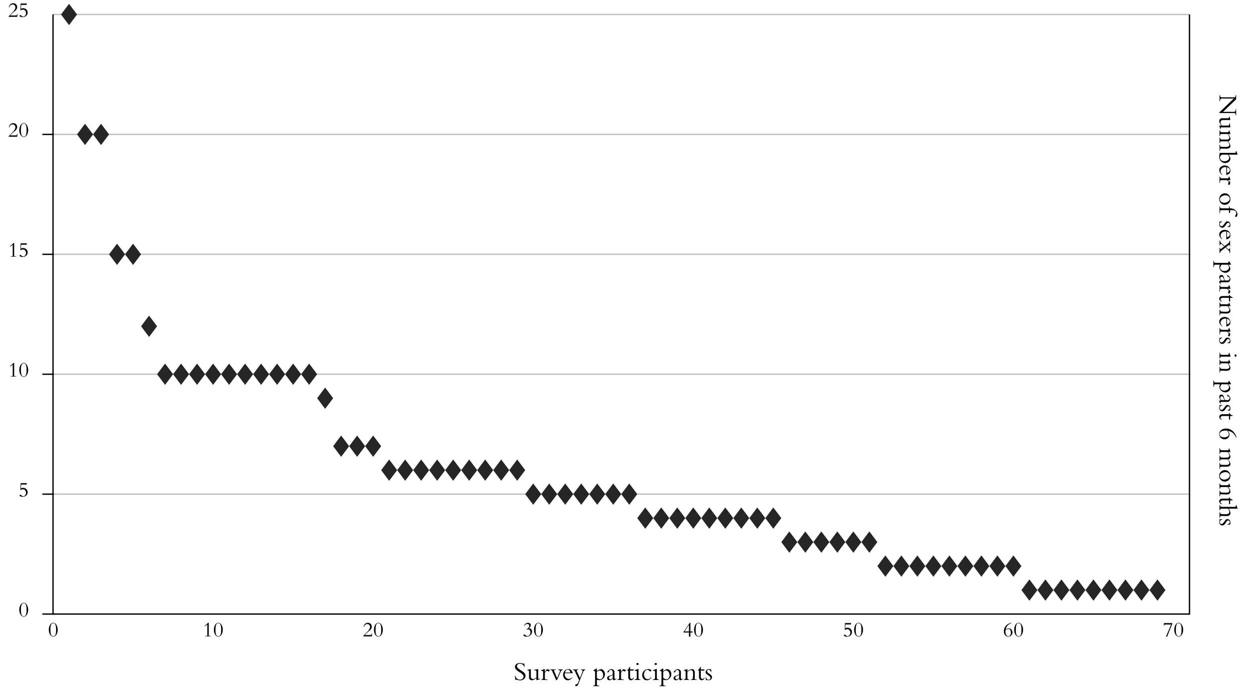
Of those who responded, 77.8% (*n* = 56) were English-speaking and 22.2% (*n* = 16) French-speaking. The mean age was 41 ± 7.3 years. For level of education, 18.1% (*n* = 13) reported a high-school education, 33.3% (*n* = 24) a bachelor's degree, and 8.3% (*n* = 6) a master's or doctoral degree. Gross income was reported as follows: 8.3% (*n* = 6) under \$20,000, 22.2% (*n* = 16) \$20,000 to \$40,000, 41.7% (*n* = 30) \$40,000 to \$80,000, and 26.4% (*n* = 19) over \$80,000. See Table 1 for a summary of these data.

Regarding sexual partnerships, the number of partners that respondents reported for the previous 6 months ranged between 1 and 25, with a mean of 5. An X-Y scatterplot of these values (Figure 1) reveals a heterogeneous distribution of partners; many participants (*n* = 40) had a few sex partners (≤ 5), some (*n* = 24) had slightly more than average (6–12), and only a very few (*n* = 5) had many (≥ 15).

Table 1 ***Overview of Survey Data***

Category	**Percentage**	**Number**
Age (*mean* 41 ± 7.3 years)		
First language		
English	77.8	56
French	22.2	16
Education		
High school	18.1	13
Bachelor's degree	33.3	24
Master's/doctoral degree	8.3	6
Income		
Under $20,000	8.3	6
$20,000–$40,000	22.2	16
$40,000–$80,000	41.7	30
Over $80,000	26.4	19
Oral sex	98.6	71
Perform: condom use = *never*	78.9	56
Perform: condom use = *always*	2.8	2
Receive: condom use = *never*	80.3	57
Receive: condom use = *always*	2.8	2
Vaginal sex	98.6	71
Condom use = *never*	15.5	11
Condom use = *always*	39.4	28
Anal sex	54.2	39
Condom use = *never*	30.8	12
Condom use = *always*	35.6	10
Regular STI testing	48.6	35
Previous STI diagnosis	18.1	13
Gonorrhea	4.2	3
Chlamydia	6.9	5
Syphilis	1.4	1
Genital HSV	4.2	3

Figure 1 ***X–Y Scatterplot of Numbers of Different Sex Partners***



Note: Three of the 72 participants did not answer this question.

Regarding sexual practices (as they related to both primary and non-primary partners), 98.6% (*n* = 71) reported practising oral sex (performing/receiving); 78.9% (*n* = 56) of these reported *never* using condoms when receiving oral sex and 80.3% (*n* = 57) reported *never* using condoms when performing oral sex. For performing/receiving oral sex, an equal percentage reported *always* using condoms: 2.8% (*n* = 2). The findings were similar for vaginal sex: 98.6% of the sample (*n* = 71) reported engaging in this form of sexual activity. Only 15.5% (*n* = 11) of those who reported vaginal sex indicated that they *never* used condoms, 39.4% (*n* = 28) reported *always,* 23.9% (*n* = 17) *sometimes,* 2.8% (*n* = 2) *50% of the time,* and 16.9% (*n* = 12) *usually.* The percentage of respondents who reported engaging in anal sex was lower: 54.2% (*n* = 39). Among these, reported condom use was as follows: 30.8% (*n* = 12) *never,* 30.8% (*n* = 12) *sometimes,* 7.7% (*n* = 3) *50% of the time,* 7.7% (*n* = 3) *usually,* and 25.6% (*n* = 10) *never.*

The respondents were also asked about their STI health-care-seeking practices and STI history. In response to these questions, 48.6% (*n* = 35) of participants reported that they regularly underwent testing and 18.1% (*n* = 13) of participants reported that they had previously been diagnosed with an STI. The 13 participants reported a total of 18 diagnoses (three individuals had had multiple infections): 4.2% (*n* = 3) reported gonorrhea, 6.9% (*n* = 5) reported chlamydia, 1.4% (*n* = 1) reported syphilis, 8.3% (*n* = 6) reported genital warts, and 4.2% (*n* = 3) reported genital herpes. Of the 13 cases, 53.8% (*n* = 7) occurred within the subgroup of 35 participants who reported undergoing regular STI testing. This group thus reported a lifetime positivity rate of 20.0% (*n* = 7/35).

Discussion

The participants in this study resembled the participants in other studies about swingers: They were in their forties, educated, and socio-economically sound (see Jenks's [1998] literature synthesis). Despite these similarities, however, the focus of this study was unique. No previous research has investigated the sexual practices and STI health-care-seeking behaviours of a group of swingers to determine how or why these practices might affect STI transmission. The foregoing data are thus novel findings that yield points for discussion.

Sexual Script Theory: Understanding Swingers' Sexual Norms

The data that were collected and analyzed as part of this study provide a cursory overview of the sexual scripts of a specific group of swingers. Indeed, they illuminate the respondents' group-level sexual norms, such as the fact that male-female oral and vaginal sex are common and that anal intercourse between men and women is relatively common. Approaching the data from the perspective of sexual script theory indicates that these sexual practices are not simply actions, but are also scripts that (1) establish the overarching behavioural norms of this group of men and women, and (2) provide the context within which their sexual behaviour can be understood. In this context, the numbers and observations reported above can be interpreted as a codified description of the overarching cultural-level scripts within which this group of swingers operate as autonomous yet group-oriented sexual beings. The similarities described above (e.g., that 98.6% practised oral sex and that nearly 80% of these did so without condoms) are the varying but similar actions that characterize this group. The proscription of male-male sexual contact can be considered another of these cultural-level rules. Consequently, these group norms were the fabric that enmeshed the members of this group into a coherent and functional whole — a successfully interacting group of swingers.

The data thus indicate the incipient point and the outcome of these participants' sexual scripts: These men and women joined swingers' clubs and engaged in the aforementioned sexual practices as members of a group of swingers, and self-identifying as such. From the perspective of sexual script theory (and its theatrical undertones), the data reveal the overarching stage (place or context) and some of the actors (people) who are necessary for sexual contact to ensue: The main stage is the swingers' club, smaller stages are the different rooms where sexual contact occurs, and the actors are the other individuals and couples who are present at the club (i.e., on the stage). Moreover, in executing these scripts the couples enter swingers' clubs with the intention of having some sort of sexual contact with people other than their primary partner, and they plan on doing so with their primary partner. This much was evident in the pilot study.

What we need to determine next, therefore, is how the various aspects of the swingers' sexual subculture culminate in the sexual practices reported in this study. In other words, what are the steps between arrival at the swingers' club and the completion of sexual contact? What is it about the swinging lifestyle and swingers' clubs that people desire, derive pleasure from, and enjoy, and how do these factors affect the ensuing sexual encounter? For example, why does unprotected vaginal/anal sex occur in some instances and not others? To answer these questions, more data are needed to describe the sexual scripts of this group of swingers. A better understanding of the meaning and significance of these scripts is essential, particularly if the data are to inform STI prevention work. Without such data, the state of knowledge will remain as it is: a superficial description that indicates that swingers in their forties are more likely than some other groups to acquire STIs but fails to add any insight that can inform strategies to address the situation. We need information not so much on which sexual practices occur and in what frequency but on swingers' sexual scripts, in order to design prevention strategies that align with (rather than oppose) these sexual scripts.

STI Transmission: The Impact of Swingers' Sexual Norms

A second point of interest in the data is that some aspects of the identified sexual norms could affect group-level rates of STI transmission. Indeed, based on the sexual practices reported by this group as a whole, the probability that certain STIs would be transmitted at elevated rates was disproportionately high.[3] In particular, the factors identified in this research population that could affect STI transmission are as follows: (1) the group's heterogeneous distribution of the number of sexual partnerships (visible in Figure 1); (2) the group's elevated mean number of sexual partners per person (five); (3) the group-level rate of concurrent sexual partnerships (i.e., both primary and swinger partners); (4) the group's relatively high rates of unprotected sex (ranging from 15.5% for vaginal sex to 80.3% for oral sex); and (5) the group's low levels of health-service utilization for STI (fewer than half the participants underwent "routine" testing, even though nearly a fifth had previously been diagnosed with an STI).

Previous research has confirmed that these five factors affect STI transmission to such a degree that, in some cases, they enable relatively non-virulent pathogens (STIs in this context) to surpass their reproductive thresholds and to spread throughout groups unusually rapidly. In such cases, infections that should "die out" due to low levels of infectivity not only continue to be transmitted but increase in incidence and prevalence. These factors might explain the elevated rates of STI transmission among swingers that have been found in previous research. To shed further light on this matter, each of the factors identified in this pilot study will be examined in detail.

Heterogeneous distribution of sexual partnerships. The heterogeneous distribution of the numbers of sex partners observed in the study (Figure 1) reveals that while most of the research participants had a limited number of partners, a few had many partner. Thus, a few people had sex with many of the swingers who made up the group (40 participants reported ≤ 5 sex partners in the previous 6 months, while only five reported ≥ 15 sex partners). Such a network distribution is often referred to as a "small world network," wherein there are only a few degrees of

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[3] As will be explained, these STIs are (in order of suspected probability) syphilis, gonorrhea, and chlamydia.

separation between any two individuals (Garnett, 2008; Morris et al., 2008). The outcome of this network distribution, from an STI perspective, is that the few individuals with many partners link many people within the group together and thus enable rapid STI transmission (Garnett, 2008; Morris et al., 2008). For the swingers in the present study, this heterogeneous distribution of sex partners created a group-level environment (by means of heightened levels of interconnectivity) that could facilitate rapid STI transmission. Such density could, in addition, be a contributing factor in the heighted incidence of STIs found in previous research with swingers. The present findings support, but do not prove, such an assertion, which highlights the need for further research to validate this finding.

Elevated mean number of sex partners. The mean number of sex partners per person in the sample (five) also increases the STI transmission probabilities, because it further increases the network density of this group of swingers. Each member of the subgroup, while not having direct sexual relations with everyone in this cluster of swingers, has sexual contact with a sufficient number to compress the network and link most of its members together. In relation to STI transmission, density is important because as density increases, so does the number of transmission routes (Garnett, 2008; Morris et al., 2008). A heightened mean number of sex partners for this group of swingers would thus exacerbate the elevated density that has already resulted from the heterogeneous distribution of sexual partnerships. As noted above, this increase in density could be another contributing factor in the elevated rates of STI transmission reported in the literature. In addition, this factor, in combination with the previous distribution factor, could yield a self-perpetuating cycle wherein these two items could increase STI incidence, and STI incidence in turn could make these two transmission factors more influential. Each would exacerbate the effect of the other. Again, however, these assertions need further exploration.

Concurrent sexual partnerships. Research also demonstrates that concurrent sexual partnerships enhance STI transmission. While concurrency was not measured in the present study, it did arise in the group due to the simultaneous sexual relations that the participants reported with their primary and non-primary sex partners. Concurrency is an integral aspect of this lifestyle: Engaging in sexual relations with people other than one's primary partner is part of the primary relationship. Research shows that high levels of concurrent sexual partnerships within a sexual network can also increase group density — a factor that facilitates STI transmission. If the rates of concurrent sexual partnerships are high enough, they can even produce sufficient levels of group density that no other STI transmission factor is needed to cause accelerated STI transmission (Garnett, 2008; Morris et al., 2008). This is because concurrency reduces the amount of time that elapses between different sexual relationships; this temporal aspect is important with regard to STI transmission because time permits the development of symptoms, routine screening, and partner follow-up. When time is reduced, so too are the factors that reduce STI transmission. Concurrency in isolation could thus explain the elevated STI rates among swingers reported in the literature. It is more likely, however, that concurrency is simply one of many factors in the increased density of this group of men and women and in the group-level rates of STI transmission.

Unprotected sexual contacts. Research confirms that condom use affects STI transmission to such a degree that the impact of the three foregoing STI transmission factors could be negated if condoms were used consistently and properly. The data collected in the present study show that condom use was not consistent. The result is that the reported unprotected sexual practices would facilitate STI transmission. This facilitation, however, would not be without discrimination. Indeed, because different STIs transmit differently under different conditions, there likely would be variations in the transmission of syphilis, gonorrhea, and chlamydia. For example, while the almost non-existent condom use during oral sex could facilitate syphilis transmission across the entire group,[4] it would have a minimal effect on group-level rates of gonorrhea and chlamydia.[5] By comparison, the unprotected vaginal and anal intercourse that was reported would permit the transmission of all three infections. The outcome of the reported sexual practices and level of protection would thus render syphilis the most likely to occur. The fact that syphilis can be transmitted via unprotected oral sex and unprotected oral sex was frequently reported in this study could help to explain the elevated rates of syphilis that previous researchers have attributed to groups of swingers (see Simms et al., 2005).

Low levels of STI health-service utilization. Lastly, STI testing is an effective prevention strategy because it identifies cases in need of treatment and contacts in need of testing. Consequently, STI testing (and the partner notification that accompanies a positive STI test report in many jurisdictions) traces the path of infection back through a given sexual

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[4] This is because syphilis is a blood-borne infection that permeates many body fluids, including saliva.

[5] While gonorrhea/chlamydia can colonize the oropharynx, the probability of rapid group-level transmission based on this site of infection is low. This form of unprotected sexual contact would nevertheless permit transmission.

network, dispensing treatment to many individuals in the process. This strategy capitalizes on the interconnectivity of sexual networks, and individuals' knowledge of their past/present sex partners, to identify and treat some STIs. Among swingers, STI testing could be a successful prevention strategy because they have a common meeting place (the swingers' club) where they can notify previous/present sex partners of their need to undergo STI testing and/or treatment. STI testing and treatment is an established method for controlling the group rate of infection. The introduction (or enhancement) of this simple prevention strategy, which is not frequently used by the swinger population, could significantly lower group-level STI transmission rates. The current low levels of STI testing would likely render this strategy successful because there is much room for improvement in uptake and use. Furthermore, the fact that swingers congregate in identifiable locations that admit researchers suggests that STI testing and treatment services might also be welcome on site. The high response rate for the survey (85.7%) and the willingness of participants to engage in frank discussions about their sexuality point to the potential acceptance of swingers' venues as testing and treatment sites. More research is needed on this topic, to discern how, when, and under what conditions the services should be offered.

Conclusion

This study examined how and why the sex norms of one group of swingers affect STI transmission. It was undertaken because (1) research indicates that swingers who attend STI clinics have elevated rates of STIs, and (2) many individuals who frequent swingers' clubs may not undergo STI testing. Surveys were distributed and direct observation undertaken on two occasions at one swingers' club, thus moving data collection into the places where swingers have sex. The data reveal that most of the research participants engaged in oral and vaginal sex and some engaged in anal intercourse, and that many engaged in all of the foregoing sexual practices without using condoms. The data also reveal a heterogeneous distribution of sex partners, concurrent sexual partnerships, and infrequent STI testing — three factors that facilitate STI transmission. The outcome of these findings is therefore that (1) the dynamics of this sexual network include many factors that facilitate STI transmission, (2) we need to conduct more research on swingers' sexual scripts, and (3) we need data on how to develop STI prevention interventions that respect/work with these sexual scripts. The openness and willingness of the research participants indicate that such investigative endeavours will not be barred by resistant or reluctant participants.

References

Bartell, G. D. (1971). *Group sex.* New York: Wyden.

Cole, C. L., & Spaniard, G. B. (1974). Mate-sharing and family stability. *Journal of Sex Research, 10,* 21–31.

Dukers-Muijers, N. H. T. M., Niekamp, A.-M., Brouwers, E. E. H. G., & Hoebe, C. J. P. A. (2010). Older and swinging: Need to identify hidden and emerging risk groups at STI clinics. *Sexually Transmitted Infections, 86*(4), 315–317.

Friedman, S., Bolyard, M., Khan, M., Maslow, C., Sandoval, M., Mateu-Gelabert, P., et al. (2008). Group sex events and HIV/STI risk in an urban network. *Epidemiology and Social Science, 49*(4), 440–446.

Gagnon, J. H., & Simon, W. (2005). *Sexual conduct: The social sources of human sexuality* (2nd ed.). Chicago: Aldine.

Garnett, G. P. (2008). The transmission dynamics of sexually transmitted infections. In K. K. Holmes (Ed.), *Sexually transmitted diseases* (4th ed.) (pp. 27–39). New York: McGraw-Hill.

Global HIV Prevention Working Group. (2006). *New approaches to HIV prevention: Accelerating research and ensuring future access.* Retrieved August 17, 2010, from http://www.globalhealth.org/sources/view.php3?id=1416.

Jenks, R. J. (1998). Swinging: A review of the literature. *Archives of Sexual Behaviour, 27,* 507–521.

Markovic, M. (2006). *The right to swing?* bepress Legal Series. Working paper 1496. Available online: http://law.bepress.com/expresso/eps/1496.

Morris, M., Goodreau, S., & Moody, J. (2008). Sexual networks, concurrency, and STD/HIV. In K. K. Holmes (Ed.), *Sexually transmitted diseases* (4th ed.) (pp. 109–125). New York: McGraw-Hill.

Murstein, B. I., Case, D., & Gunn, S. P. (1985). Personality correlates of ex-swingers. *Lifestyles: Journal of Changing Patterns, 8,* 21–34.

North American Swing Club Association. (1997). *Frequently asked questions.* Retrieved August 12, 2010, from http://www.nasca.com/states/nasca_faq.html.

Public Health Agency of Canada. (2009). *STI data tables.* Retrieved March 16, 2010, from http://www.phac-aspc.gc.ca/std-mts/sti-its_tab/index-eng.php.

Simms, I., Fenton, K. A., Ashton, M., Turner, K. M. E., Crawley-Boevy, E. E., Gorton, R., et al. (2005). The re-emergence of syphilis in the United Kingdom: The new epidemic phases. *Sexually Transmitted Diseases, 32*(4), 220–226.

Weiss, D. (1983). *Open marriage and multilateral relationships: The emergence of non-exclusive models of the marital relationship. Contemporary families and alternative lifestyles.* Newbury Park, CA: Sage.

Patrick O'Byrne, RN, PhD, is Assistant Professor, School of Nursing, Faculty of Health Sciences, University of Ottawa, Ontario, Canada. Jessica A. Watts, BScN, is a Master's in Nursing student, School of Nursing, Faculty of Health Sciences, University of Ottawa.

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Résumé

Interventions en cessation tabagique à l'intention des patients hospitalisés et gérées par le personnel infirmier : résultats d'un essai clinique aléatoire

Patricia M. Smith, Linda Corso,
K. Stephen Brown, Roy Cameron

Cet essai clinique randomisé a été conçu pour évaluer, en cessation tabagique, l'efficacité des interventions intensives comparées aux interventions brèves, chez les patients hospitalisés. La prestation de conseils et la remise de dépliants figurent parmi les interventions brèves. Le counseling au chevet du patient, la remise de documentation à emporter et la prestation d'un couseling par la voie de sept appels téléphoniques à la suite d'un congé d'hôpital et s'échelonnant sur plus de deux mois figurent parmi les interventions intensives. Ces dernières ont généré une abstinence confirmée de 1 an chez 28 % de participants (85/301), alors que ce chiffre se situe à 24 % (76/315) pour les interventions brèves. Le taux d'abstinence était particulièrement élevé chez les patients qui n'ont pas eu recours à la pharmacothérapie (36 %), contrairement à ceux qui ont adopté cette approche (16 %). Tel était le cas aussi chez les patients atteints de maladies cardiovasculaires (40 %), par opposition aux personnes atteintes d'autres maladies (20 %). Puisqu'il s'agissait d'un essai clinique à répétition, des points de repères à des fins de planification ont été proposés : un recrutement de fumeurs identifiés de 12 % à 15 % ; une complétion de plus de 90 % pour les interventions intensives; 15 % d'impersévérance; et une corroboration d'abstinence de 75 %. Les résultats confirment les conclusions chez l'ensemble des patients hospitalisés, y compris celles portant sur l'abstinence absolue et les résultats de traitements anticipés, l'impact des patients atteints de maladies cardiovasculaires sur les résultats, la reproductibilité d'une abstinence élevée dans un système de soins de santé universels, et le besoin de poursuivre d'autres recherches pour éclairer la pratique.

Mots clés : cessation tabagique, interventions brèves, interventions intensives, abstinence, impersévérance

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Nurse Case-Managed Tobacco Cessation Interventions for General Hospital Patients: Results of a Randomized Clinical Trial

Patricia M. Smith, Linda Corso,
K. Stephen Brown, Roy Cameron

This randomized clinical trial was designed to test the efficacy of intensive versus brief smoking cessation interventions for hospital patients. The interventions included advice and pamphlets for Brief and bedside counselling, take-home materials, and 7 post-discharge telephone counselling calls over 2 months for Intensive. Confirmed 1-year abstinence was 28% for Intensive (85/301) and 24% for Brief (76/315). Abstinence was significantly higher for patients who did not use pharmacotherapy (36%) versus those who did (16%) and for patients with CVD (40%) versus other diagnoses (20%). Because this was a replication trial, benchmarks for planning can be suggested: 12% to 15% recruitment of identified smokers, 90% plus completion for Intensive, 15% drop-out, and 75% abstinence corroboration. The results consolidate findings for general inpatients, including expected absolute abstinence and treatment outcomes, the effect of CVD patients on outcomes, the reproducibility of high abstinence in a universal health-care system, and the need for more research to inform practice.

Keywords: acute care, health promotion, intervention effects, nursing interventions, outcome research and measures, tobacco use

This randomized clinical trial evaluated a nurse case-managed intensive versus brief tobacco cessation intervention for general hospital patients. The Canadian Nurses Association acknowledges the importance of nurses helping patients to quit smoking (Canadian Pharmacists Association, 2001), and the Registered Nurses Association of Ontario (RNAO) (2007), because of the severity of tobacco-related diseases, has developed best practice guidelines for integrating smoking cessation into daily practice. Tobacco use is the primary cause of preventable mortality and morbidity in developed countries: More than 80% of respiratory diseases, 30% of cardiovascular disease (CVD), 85% of lung cancers, 30% of all other cancers, and one in five deaths are directly related to tobacco use (US Department of Health and Human Services, 2004).

Although incorporating tobacco interventions into daily nursing practice can be a challenge (Rice & Stead, 2008), hospitalization provides an opportunity to do so. Saliency of disease often motivates patients to quit; patients are removed from smoking cues and forced into temporary abstinence, frequently undergoing the worst withdrawal during hospitalization (Emmons & Goldstein, 1992); and the benefits of quitting can be immediate — for instance, decreased risk for intra-operative and post-operative complications (e.g., Møller, Villebro, Pedersen, & Tønnesen, 2002). Cessation can also result in greater risk reduction and cost-effectiveness than other secondary disease-management therapies such as medication (Goldman, Garber, Grover, & Hlatky, 1996) and in decreased utilization of health services compared to patients who do not quit (Wagner, Curry, Grothaus, Saunders, & McBride, 1995).

While there is evidence for the effectiveness of inpatient tobacco interventions, more research is needed (Fiore et al., 2008). The most recent Cochrane review included seven intensive versus brief tobacco intervention trials with general inpatients (Rigotti, Munafo, & Stead, 2008) — two tested pharmacotherapy, two tested behavioural interventions without pharmacotherapy, two tested behavioural interventions with pharmacotherapy, and one was written in Japanese so was not accessible. The pooled effect showed that inpatient contact plus a minimum follow-up of 1 month was significantly more effective than brief interventions with no follow-up. However, five trials were small (fewer than three quitters in the control group in two trials), only one was significant independent of meta-analyses, and none were conducted in a Canadian context.

The significant trial was a nurse case-managed intensive behavioural intervention without pharmacotherapy carried out within California health maintenance organizations (HMOs). It showed high 1-year confirmed abstinence (27% vs. 20% control) and, counter-intuitively, significantly lower abstinence for patients who self-selected to use pharmacotherapy, likely due to higher levels of addiction (Houston Miller, Smith, DeBusk, Sobel, & Taylor, 1997), a finding that has since been replicated with cardiac patients in western Canada (Smith & Burgess, 2009).

Based on the principle that replication is the cornerstone of good science, the present trial was designed to replicate the significant HMO trial in Canadian hospitals to see if the high cessation rates and intervention effect would generalize. The Canadian system was expected to have lower average socio-economic status (SES) than HMOs because the HMO system serves those who are employed or can afford private health-care insurance whereas Canadian hospitals serve the full spectrum of SES due to equal access to care through a single-tier universal health-care system. Since smoking is higher and cessation is lower among lower SES, whether measured as education, income, or wealth (Chapman, Fiscella, & Kawachi, 2010), it was not evident that the HMO findings would replicate. The only other intensive behavioural intervention trial (besides the HMO trial) resulted in low, non-significant outcomes (10% vs. 9%) (Hennrikus et al., 2005).

The HMO intervention, Staying Free, originated with post-myocardial infarction (MI) patients (Taylor, Houston Miller, Killen, & DeBusk, 1990). Nurses were enlisted as case managers due to their clinical experience and their integrated role in the health-care system (DeBusk et al., 1994). The intervention, initiated during hospitalization and followed up post-discharge by telephone, is front-end loaded — the initial session is the longest and most calls are in the first few weeks to capture the most critical time for preventing relapse (Taylor et al., 1990). The intervention is based on increasing self-efficacy to remain abstinent, and efficacy has remained the primary predictor in Staying Free trials (Smith & Burgess, 2009; Smith, Kraemer, Houston Miller, Taylor, & DeBusk, 1999). The focus on Bandura's (1986) self-efficacy originated with the researchers' finding in cardiac rehabilitation that efficacy was a better predictor of behaviour than past performance (Taylor, Bandura, Ewart, Houston Miller, & DeBusk, 1985). Staying Free has been tested as part of a multiple-risk-factor intervention (DeBusk et al., 1994) and has been implemented in nursing practice with self-reported abstinence identical to that found in the HMO trial (Smith, Reilly, Houston Miller, DeBusk, & Taylor, 2002). It is the only inpatient intervention awarded the US Congressionally-Based Top Tier Evidence Standard (Coalition for Evidence-Based Policy, 2010).

The hypotheses in the present trial were based on the HMO trial. We hypothesized that: (1) a nurse case-managed intensive intervention would increase abstinence significantly over a brief intervention with general inpatients, (2) absolute rates would be similar to the HMO rates ($\geq$ 20%), and (3) self-selected pharmacotherapy users would have significantly higher addiction and lower abstinence. A prediction equation was used to test the effects of the significant HMO predictors and efficacy on abstinence.

A secondary question, designed to consolidate findings from the literature, explored whether diagnoses of CVD or MI affected absolute cessation rates for the study. In meta-analyses (Rigotti et al., 2008), abstinence is high for CVD and MI patients and comparatively low for general inpatients. All general inpatient trials have included CVD patients, but only Houston Miller et al. (1997) report cessation rates for CVD and other diagnoses separately. The findings suggest that programs that enrol larger proportions of CVD patients should be expected to have higher cessation rates overall, which might help to explain the wide variability in abstinence for general patient trials.

For program planning, we tracked recruitment, treatment fidelity, drop-out, and abstinence corroboration in an attempt to set benchmarks to address gaps in the literature. Only one general inpatient trial (Hennrikus et al., 2005) has reported intervention fidelity. It is also the only study to report recruitment based on all identified smokers, not only eligible smokers, but the data were incomplete. Since both drop-out and abstinence corroboration are used in calculating abstinence but both have varied widely, a replication trial, such as the present one, can address benchmarking of these issues more directly than a one-off trial.

Methods

Design

This randomized clinical trial, conducted in three community hospitals in southern Ontario, tested two nurse case-managed inpatient smoking cessation interventions — Intensive and Brief. To isolate the treatment effect, all participants were administered Brief before randomization. Patients were not blinded to treatment. A computerized random number generator was used to select random permuted blocks of 10 patients for randomization to treatment, which was stratified by hospital and by age (less than 45 years, 45 plus years) because the study was originally designed for patients aged 45 plus — the HMO study showed that older patients were more likely to quit (Smith et al., 1999). Two weeks into recruitment, low numbers of older smokers resulted in our extending eligibility to 18 plus years. Power calculations were based on the HMO trial wave 1 (Taylor et al., 1996). Assuming a base rate of 20% 1-year confirmed abstinence, 293 patients per group would provide 80% power ($p < .05$) to find a 10% absolute difference. The base rate could be as low as 9% and the trial would still have 80% power ($p < .05$) to detect an 8% absolute difference. The study received ethics clearance from the hospitals and the researchers' institutional review board.

Sample

Eligibility criteria were identical to those in the Houston Miller et al. (1997) trial: 18 plus years, tobacco use in the last 30 days, minimum 36-hour stay, telephone access in the telephone-exchange area, and willingness to be randomized and to quit (all intensive intervention trials except Hennrikus et al. [2005] have selected on intention to quit). Exclusion criteria were: enrolled in another cessation trial, pregnant, medically complicated (e.g., palliative, unstable), institutionalized, unable to speak English/communication difficulties, substance abuse, and psychiatric history.

Case Managers

Two part-time recruitment nurses and one part-time intervention nurse were hired by the investigators for each hospital. Training included 1 week of education, role-playing and shadowing, four conference calls with an HMO nurse during the first 2 months, and semi-monthly case-review meetings throughout recruitment.

Brief Intervention

Brief (5 minutes) included cessation advice personalized to patients' medical conditions and review of two take-home pamphlets (a community resources pamphlet and the Canadian Cancer Society's *How to Quit*). Attending physicians, blind to treatment condition, were prompted by a note in patients' charts to provide a message personalized to patients' medical condition (for the script, see Smith et al. [2002]).

Intensive Intervention

Inhospital education included risks of smoking, benefits of quitting, withdrawal, weight gain, urges, smoke-free homes, and take-home materials (relapse-prevention video, workbook, and relaxation tape from the American Heart Association). Counselling focused on increasing self-efficacy to remain abstinent, which was operationalized in the intervention using Marlatt and Gordon's (1985) relapse-prevention model. The model maintains that smoking (behaviour) is situation-specific so it is vital to develop strategies that increase self-efficacy to remain smoke-free in specific situations. The strategies need to be personally relevant and not standardized, because what works for one person will not necessarily work for another. Patients rated their self-efficacy to remain abstinent in 14 situations identified as high risk for smoking (Baer, Holt, & Lichtenstein, 1986) and worked with the intervention nurse to develop cognitive, behavioural, and social-support strategies to remain abstinent in situations for which confidence was less than 70%. Post-discharge telephone counselling (5–10 minutes/call), scheduled for 2, 7, 14, 21, 30, 45, and 60 days, focused on relapse prevention and/or quitting after a relapse. Pharmacotherapy was not provided.

Procedure

All patients admitted to participating hospitals over a 16-month period (November 1998–February 2000) were asked by admitting clerks if they had used tobacco in the month prior. Recruitment nurses received a daily census that included smoking status to allow for efficient identification of smokers and review of charts for eligibility. They approached patients once medically stabilized, described the study, obtained informed

Table 1 ***Baseline Characteristics of Randomized Patients***

Category	**Intensive Counselling** $N = 309$	**Brief Counselling** $N = 334$
Males: number (%)	148 (48)	169 (51)
Age (years): $M \pm SD$ *(range)*	49 ± 14 (18–83)	49 ± 14 (18–81)
≥ 45 years: n (%)	194 (63)	204 (61)
Caucasian: n (%)	293 (96)	320 (96)
Education (≤ high school): n (%)	232 (75)	238 (71)
Employed: n (%)	180 (58)	210 (63)
Married/common law: n (%)	196 (63)	218 (65)
Cigarettes/day: $M \pm SD$ *[mode] (range)*	20 ± 12 [25] (1–75)	20 ± 12 [25] (1–100)
Addiction: $M \pm SD$ *(range)*	13 ± 4 (5–25)	13 ± 4 (5–25)
Quit at least 1 week within last year: n (%)	75 (24)	77 (23)
Smoked during hospitalization: n (%)	21 (7)	31 (9)
Depression: $M \pm SD$ *(range)*	2 ± 2 (0–8)	2 ± 2 (0–8)
Confidence to quit: $M \pm SD$ *(range)*	73% ± 23 (0–100)	68% ± 24 (0–100)
Intention; $M \pm SD$ *(range)*	6 ± 1 (1–7)	6 ± 1 (3–7)
Definitely intend to quit: n (%)	174 (57)	191 (58)
Lives with smokers: n/N (%)	164/274 (60)	155/296 (52)
No smoking bans at home: n/N (%)	132/301 (44)	152/326 (47)
Drinks/week: $M \pm SD$ *[median, mode](range)*[a]	8 ± 8 [6, 2] (1–36)	7 ± 7 [5, 2] (1–50)
Hospital stay (days); $M \pm SD$ *(range)*	6 ± 6 (1–68)	6 ± 6 (1–71)

[a] Drinks/week applies to drinkers only: $n = 146$ Intensive; $n = 159$ Brief.

Note: Unless stated, fewer than five were missing from the denominators for any analysis.

consent, collected baseline measures, provided Brief, opened the randomization envelope, and informed patients of their group assignment. Intervention nurses provided the inhospital and post-discharge Intensive. Research assistants, blind to treatment conditions, telephoned participants 3, 6, and 12 months post-discharge to assess smoking status; calls were recorded as missed after 25 attempts.

Measures

The Houston Miller et al. (1997) measures were used. These included demographics, hospital stay, and smoking history (Table 1). Published scales included a modified Fagerstrom Tolerance Questionnaire (*range* = 5 [low addiction] to 25 [high addiction]) with test-retest reliability of .71 to .90 (Killen, Fortmann, Newman, & Varady, 1990); confidence to quit (0% to 100%) with established discriminate validity to distinguish successful quitters from non-quitters (Smith et al., 1999); and depressed mood in the last month (*range* = 0 [not at all] to 8 [severely]), which has established discriminate validity and has correlated highly with the Beck Depression Inventory short form (r = .70; King, Taylor, Haskell, & DeBusk, 1989). Smoking status was self-reported 7-day point prevalence at 3, 6, and 12 months post-discharge (not even a puff for the last 7 days; Ossip-Klein, Parker, Bigelow, Curry, & Kirkland, 1986) and confirmed at 1 year (saliva cotinine less than 15 ng/mL or proxy-confirmation). Receipt of physician advice was measured at 3 months, use of adjunct resources at 6 and 12 months, and use of pharmacotherapy at 3, 6, and 12 months.

Statistical Analyses

Baseline characteristics were compared using chi-square and t tests. Type I errors for multiple baseline and subgroup analyses were controlled using Bonferroni adjustment ($p < .01$). Mantel-Haenszel test of homogeneity of effects determined whether the data could be pooled across the stratification variables for outcome analyses. The interventions as a whole, but not the components, were tested for their effects on abstinence, with group differences analyzed using odds ratios (OR) with 95% confidence intervals (CI); logistic regression was used for subgroup analyses to test interactions between the grouping variable and treatment. To prevent over-fitting the prediction equation, we used hierarchical versus stepwise regression, a criterion of 15 quitters/predictor, and included only variables with less than 10% missing data and tolerance greater than 0.80 with other variables to minimize multicollinarity (Babyak, 2004). Entry steps were as follows: (1) treatment and the significant HMO predictors (Smith et al., 1999) — efficacy, age, addiction, depressed mood, and drinks/week; (2) MI versus other diagnoses, given that MI studies have the highest abstinence rates (Rigotti et al., 2008); and (3) four additional variables with previous predictive validity — education (Chapman et al., 2010), gender (Croghan et al., 2009), previous-year quit 7 plus days (Pierce, Gilpin, & Farkas, 1998), and home smoking bans (Messer, Mills, White, & Pierce, 2008).

Results

Smoking prevalence was 19% — 33% for less than 45 years (2,030/6,123) and 15% for 45 plus years (3,116/20,847). Of the smokers, 12% enrolled, 25% refused, and 62% were ineligible (Figure 1), some for multiple reasons (456). Of the reasons for ineligibility, 42% were medically related: complicated (915), substance abuse (401), psychiatric (177), obstetric (45); 41% were short admissions/missed (1,495); and 17% for other reasons — outside calling area (195), communication difficulty (151), already enrolled (136), institutionalized or transferred (66), psychosocial (26), no phone (25), other (38). There were no between-group differences at baseline (Table 1) or lost to follow-up (Figure 1). Patients lost to follow-up had significantly higher depression (2.9 ± 2.8 vs. 2.4 ± 1.89) and lower confidence (64% ± 22% vs. 71% ± 24%); fewer were married (48/94 vs. 349/522); and fewer definitely intended to quit (38/94 vs. 308/517).

Treatment Fidelity

All 643 participants received Brief prior to randomization. At 3 months, 55% reported receiving physician advice (Brief 146/270; Intensive 140/253), which varied significantly by disease but not by treatment: CVD 76% (111/146), pulmonary 64% (37/58), other internal medicine 61% (74/121), orthopedic 43% (17/40), surgery 35% (26/75), cancer 33% (9/27), gynecology 21% (12/56).

In Intensive, 305 received bedside counselling, which averaged 36 minutes (± 20, *range* = 5–165) excluding video-viewing and 48 minutes (± 24, *range* 5–183) including video; two declined and two were missing data. Almost all received the workbook (97%), audiotape (96%), and video (95%), and 96% received at least one post-discharge phone call, with the average number of calls being six (± 2; Figure 1). By the end of Intensive treatment, 20 patients were lost to follow-up. Scores on the 14-item efficacy counselling questionnaire (*mean* = 66% ± 18%) correlated significantly with baseline efficacy ($r = 0.405, p < .001$).

Abstinence

Mantel-Haenszel tests of homogeneity of effects were non-significant, indicating that data from the hospitals and age categories could reasonably be pooled for analyses. Intensive had significantly higher abstinence

Figure 1 ***Patient Enrolment, Allocation, Intervention Completion, and Follow-up***

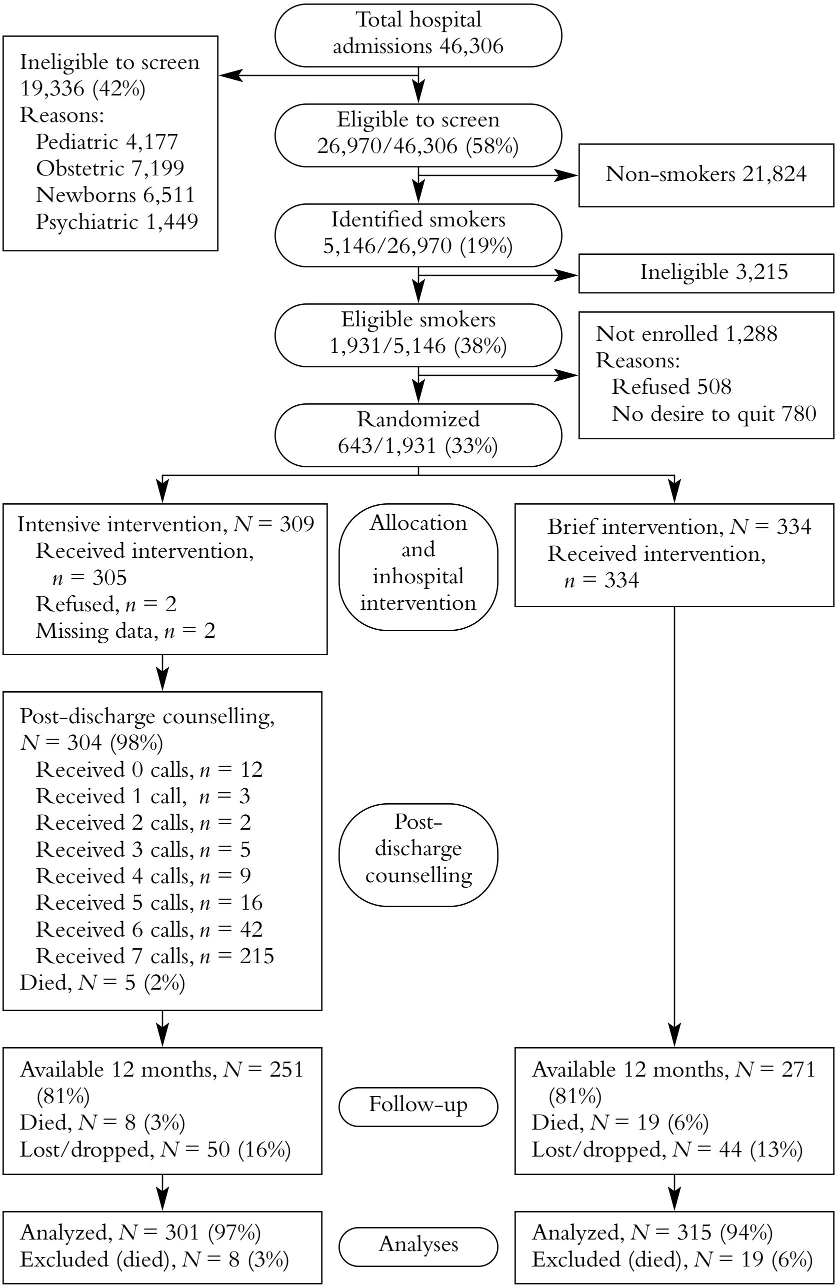

Table 2 ***Tobacco Abstinence by Treatment***

	Intensive Counselling		Brief Counselling				
	n/N	**(%)**	***n/N***	**(%)**	**% Diff**	**OR**	**95% CI**
3-month self-report	124/301	(41)	104/315	(33)	8	1.42	1.02–1.97
6-month self-report	103/301	(34)	98/315	(31)	3	1.15	0.82–1.61
12-month self-report	108/301	(36)	105/315	(33)	3	1.12	0.80–1.56
12-month confirmed	85/301	(28)	76/315	(24)	4	1.24	0.86–1.77
*Excluding patients not available for follow-up (*n *= 522)*							
12-month self-report	108/251	(43)	105/271	(39)	4	1.19	0.84–1.69
12-month confirmed	85/251	(34)	76/271	(28)	6	1.31	0.90–1.91
12-month confirmed abstinence by discharge diagnosis							
Cardiovascular (CVD)	39/92	(42)	33/88	(37)	5	1.23	0.68–2.23
MI	20/42	(48)	20/51	(39)	9	1.41	0.62–3.22
Other IHD	9/23	(39)	4/18	(22)	17	2.25	0.56–9.05
Other CVD	10/27	(37)	9/19	(47)	-10	0.65	0.20–2.15
Pulmonary	9/37	(24)	10/34	(29)	-5	0.77	0.27–2.21
Other internal medicine	9/64	(14)	11/76	(14)	0	0.97	0.37–2.50
Cancer	6/19	(32)	3/15	(20)	12	1.85	0.38–9.08
Orthopedic	6/21	(29)	4/24	(17)	12	2.0	0.48–8.37
Gynecology	6/26	(23)	8/40	(20)	3	1.20	0.36–3.97
Non-cardiac surgery	10/42	(24)	7/38	(18)	6	1.38	0.47–4.09

OR = odds ratio; CI = confidence interval

Note: CVD rates include MI, other IHD, and other CVD. The trial does not have sufficient power to statistically test subgroups by diagnosis but data are presented here to compare with those of other studies and for use in meta-analyses. Caution should be used when comparing cessation rates by diagnosis expressed as a percentage, because a one-unit change in a numerator can vary widely across diagnoses in terms of percentage due to differences in denominators.

than Brief at 3 months and marginally higher abstinence at 6 and 12 months (Table 2).

Pharmacotherapy

Twenty-six percent of patients self-selected to use pharmacotherapy (Brief 62/250, Intensive 68/240) — bupropion (72), patch (22), gum (14), bupropion and patch or gum (18), patch and gum (2), and not specified (2); 26% in each group were missing data (46 not reached at any follow-up, 80 missing at least one follow-up). Pharmacotherapy users had significantly lower 1-year confirmed abstinence (21/130, 16%) than non-users (129/360, 36%; OR = 2.92, 95%, CI = 1.7–4.89); there were no significant treatment or treatment by pharmacotherapy interaction effects. The only significant baseline differences between users and non-users were as follows: users had higher addiction (14.6 ± 4 vs. 12.8 ± 4), users smoked more cigarettes/day (23 ± 12 vs. 18 ± 11), and more users had previously used pharmacotherapy (87/130 vs. 120/360).

Medical Condition

Abstinence for CVD patients (72/180, 40%) was significantly higher than for non-CVD patients (89/436, 20%; OR = 2.59, 95% CI = 1.77–3.78); there were no significant treatment or treatment by disease interaction effects. More CVD patients were male (116/180 vs. 181/436), definitely intended to quit (125/179 vs. 221/432), and received physician advice (116/152 vs. 170/371), and they were significantly older (55 ± 11 vs. 46 ± 14), had higher confidence (75% ± 24% vs. 68% ± 23%), and smoked more cigarettes/day (23 ± 14 vs. 18 ± 11).

Predictors of 1-Year Confirmed Abstinence

Patients missing data on any of the predictor variables were excluded from the regression analysis (45/616). Regression step 2 was significant but step 3 was not, indicating that step 2 was the better model. All steps 1 and 2 variables except treatment were significant: efficacy (OR = 1.02, 95%, CI = 1.01–1.03), age (OR = 1.02, 95%, CI = 1.002–1.031), addiction (OR = 0.94, 95%, CI = 0.90–0.99), depressed mood (OR = 0.89, 95% CI = 0.81–0.97), drinks/week (OR = 1.03, 95% CI = 1.00-1.06), and MI (OR = 2.22, 95% CI = 1.34–3.70).

Discussion

This nurse case-managed smoking cessation intervention trial conducted within the Canadian health-care system provided a rigorous replication of Houston Miller et al.'s (1997) HMO trial. Despite a substantially lower SES than in the HMO trial, abstinence for both Brief and Intensive was higher than 20%, as expected. Intensive achieved the predicted abstinence rate but was not significantly higher than Brief, which was unprecedentedly high, thereby lessening the difference between treatments. Other findings consistent with the findings of the HMO trial include significantly lower abstinence among self-selected pharmacotherapy users, which was half that of non-users; significantly higher abstinence among CVD patients, which was double that of non-CVD patients; and the same predictors as the HMO trial, with a diagnosis of MI improving prediction. Abstinence corroboration and proportion of CVD patients were the same as found in the HMO trial, allowing for equitable comparison between trials.

The treatment difference and absolute abstinence rates provide important insights. The smaller than expected (4%) treatment difference ironically highlights what might be realistic for general inpatients. It is identical to the weighted average difference for the other two intensive behavioural trials (Hennrikus et al., 2005; Houston Miller et al., 1997) and higher than the weighted average difference that was significant for all intensive general inpatient trials in the most recent meta-analysis (Rigotti et al., 2008), suggesting that with this trial added to the collective, intensive interventions will remain evidence-based practice. This trial also showed that it is possible to reproduce the high HMO rates and achieve high cessation rates for both Intensive and Brief, even with a lower SES population in a different health-care system. The only other intensive behavioural trials were at odds — one reported high abstinence for both groups and the other low. The present trial increases the weighted average abstinence for behavioural interventions to 22% for Intensive and 18% for Brief. This would require 1,236 patients/group for future research to have sufficient power to find a significant difference (one-sided test); larger samples would be required for more complex designs.

The outcomes stratified by medical condition contribute further by showing that the proportion of CVD and MI patients will positively affect both absolute rates and treatment differences, thereby highlighting the importance of stratifying randomization and analyses by CVD to avoid confounding results. The stratified analyses showed that cessation among non-CVD patients in both groups was identical to that in the HMO trial, which is the only other general inpatient trial to tease out the effect of CVD outcomes on overall cessation (Houston Miller et al., 1997). With these two identical outcomes and no other data available, a provisional benchmark for non-cardiac abstinence can be suggested (22% Intensive, 19% Brief). The stratification analyses also elucidated that the source of the high Brief abstinence relative to the HMO trial was due to CVD patients, among whom abstinence for both treatments was higher than in the HMO trial and abstinence for Brief was oddly high among non-IHD (ischemic heart disease) patients with reversed treatment outcomes. The non-IHD subgroup, although small, did affect overall CVD Brief rates and decreased the CVD treatment difference. These findings suggest that while the overall high Brief abstinence is compelling, it was related only to CVD and should be interpreted with caution.

Intensive performed as expected even though the treatment difference was not significant. There is no empirical evidence that Intensive rates can go higher — along with the HMO trial (Houston Miller et al., 1997) and one other trial, these are the highest reported for general inpatients (see Rigotti et al., 2008). There are also no empirically based suggestions for how to improve Intensive. It included more than 1 month of post-discharge follow-up, the only identifiable successful ingredient in inpatient interventions (Rigotti et al., 2008), and self-efficacy, the basis of the intervention, was a significant predictor of cessation. In meta-analyses with general populations there is no evidence that specific techniques or increased contact beyond what Intensive included can enhance cessation further — only varenicline and nicotine patch plus bupropion and extended-use patch plus gum/inhaler have surpassed Intensive's 28% abstinence (Fiore et al., 2008).

Self-selected use of pharmacotherapy was consistent with that in the HMO trial (Houston Miller et al., 1997) but lower than that for the general population (Shiffman, Brockwell, Pillitteri, & Gitchell, 2008). Among users, abstinence was significantly lower than among non-users and addiction was higher, consistent not only with two inpatient trials — the HMO trial and a cardiac trial (Smith & Burgess, 2009) — but with a review of self-selected use in the general population (Walsh, 2008). Although these findings seem counter-intuitive, as meta-analyses show a benefit for pharmacotherapy (Fiore et al., 2008), cessation with pharmacotherapy tends to be high in drug trials and low under "real world" self-selection conditions, in part due to medication non-compliance, which is related to lower cessation (Walsh, 2008). Clinical implications include ensuring that recommended dosages and durations are followed, and for persistent difficulties, such as repeated relapse and breakthrough withdrawal symptoms, higher-dose nicotine replacement therapy, combination therapies, and extended-use pharmacotherapy are recommended (Fiore et al., 2008). The development of standardized compliance measures would be beneficial in future studies (Walsh, 2008).

Program planning benchmarks based on the three intensive behavioural trials can now be suggested: 12% to 15% recruitment of identified smokers (consistent with Hennrikus et al., 2005), 15% dropout (average of the HMO trial and Hennrikus et al., 2005), and 75% abstinence corroboration (consistent with the HMO trial). Of note, recruitment was much higher than the less than 1% of estimated smokers in the general population recruited through radio and newspapers for a smokers' helpline study with this intervention (Smith et al., 2004), thereby highlighting the receptivity of inpatients to interventions. Age distributions, however, will affect the absolute number recruited: Smoking prevalence was lower in this study than in the general population because the majority of hospitalized patients were older and their smoking rate was fittingly half that of younger patients.

We need further research specifically to inform decision-making in practice. Inpatient trials have all used a "centralized" approach — that is, full-time case managers hired by researchers to provide the interventions. Comparative evidence is needed for the "decentralized" guideline approach, which recommends that all staff nurses provide at least Brief interventions to their own patients (e.g., RNAO, 2007). Even though centralized Brief in research is consistent time-wise with guideline decentralized recommendations, it is likely not equivalent because patients are engaged for an additional 10 to 20 minutes for baseline data collection and there is more accountability when only one nurse is providing the intervention. Possible studies include: (a) centralized Brief versus staff nurse Brief, to see how Brief works in practice; (b) similarly, centralized Intensive versus staff nurse Brief; and (c) staff nurse Brief versus staff nurse Intensive (Brief with follow-up to a community resource — e.g., quit line). Needed also is translational research on adoption, implementation, and maintenance of programs in practice that includes process outcomes (e.g., fidelity and enrolment) and costs (e.g., training, utilization, and cost-benefit).

The major limitation of the trial is the lack of generalizability to subgroups that were excluded, such as patients with short admissions and patients hospitalized for substance abuse and/or psychiatric co-morbidities for whom it is difficult to design interventions that take into account various cognitive and social deficits (Esterberg & Compton, 2005). Also, the patients were English-speaking and predominately Caucasian; it is not clear how the interventions would work in different cultural settings, such as in hospitals with large Francophone or Aboriginal populations.

The results from this trial help to consolidate research findings for inpatient cessation interventions but present somewhat of a paradox for practice. As noted, although the treatment difference was not significant, this trial will increase the weighted average treatment difference for general inpatients in meta-analyses and thus Intensive will continue to be supported as evidence-based practice. There are various ways to fund Intensive and there are "how to" resources to help hospitals with implementation (Smith & Taylor, 2006). Brief might also be an appealing option in these times of cost constraint. Although it is lacking inpatient meta-analytic evidence, Brief is recommended by clinical practice guidelines as the minimum for nursing practice (RNAO, 2007). Decentralized Brief, however, is not a panacea — training must be ongoing and can be complex in large hospitals; there is often staff resistance and lack of accountability; it is difficult to measure outcomes; and it still requires funds from the operating budget and some form of central organization (Smith & Taylor, 2006).

In conclusion, this trial contributes to evidence-based nurse case-managed prevention interventions in Canada. It is the third smoking cessation trial to test an intensive behavioural intervention without pharmacotherapy, and the first to do so in Canada. Because this was a replication study, we were able to address important issues needed to consolidate research findings that have not been directly addressed — absolute cessation rates, expected treatment differences, the effect of CVD patients on overall outcomes, replicability in universal health care, benchmarks for planning, and the need for research that informs practice. The consistency in design and outcomes with the HMO trial adds to the confidence with which the interpretations were made and will add value to inpatient meta-analyses by decreasing heterogeneity.

Despite the growing evidence base, inpatient cessation interventions in Canada are not mandated by policy or needed for accreditation, so decisions to implement them will come down to organizational values and how decisions are made about the allocation of finite health-care dollars. The benefits of prevention in clinical practice are often in the future and are easier to overlook in the short term when immediate, acute-care needs are straining resources. The MI that did not happen because someone quit smoking is not easy to measure but the costs to prevent it are, and the cost savings from cessation ultimately get passed on to the ministry of health and not necessarily to the hospital: The bed that is not filled with the prevented MI will be filled by another. Nonetheless, studies like the present one are important for the development of evidence and to continue to challenge researchers and practitioners to find ways to incorporate prevention that will ultimately reduce health-care costs and benefit patients, clinical practice, and society.

References

Babyak, M. A. (2004). What you see may not be what you get: A brief, nontechnical introduction to overfitting in regression-type models. *Psychosomatic Medicine, 66,* 411–421.

Baer, J. S., Holt, C. S., & Lichtenstein, E. (1986). Self-efficacy and smoking re-examined: Construct validity and clinical utility. *Journal of Consulting and Clinical Psychology, 54*(6), 846–852.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Englewood Cliffs, NJ: Prentice-Hall.

Canadian Pharmacists Association. (2001). *Joint statement on smoking cessation tobacco — The role of health professionals in smoking cessation.* Retrieved May 17, 2010, from http://www.pharmacists.ca/content/about_cpha/who_we_are/policy_position/pdf/SmokingCessationStatement-Final.pdf.

Chapman, B., Fiscella, K., & Kwachi, I. (2010). Education and smoking: Confounding or effect modification by phenotypic personality traits? *Annals of Behavioral Medicine, 3,* 237–248.

Coalition for Evidence-Based Policy. (2010). *Top Tier Evidence Initiative: Evidence summary for the Staying Free smoking cessation program.* Retrieved October 7, 2010, from http://toptierevidence.org/wordpress/?page_id=507.

Croghan, I. T., Ebbert, J. O., Hurt, R. D., Hays, J. T., Dale, L. C., Warner, N., et al. (2009). Gender differences among smokers receiving interventions for tobacco dependence in a medical setting. *Addictive Behaviors, 34*(1), 61–67.

DeBusk, R. F., Houston Miller, N., Superko, R., Dennis, C., Thomas, R. J., Lew, H. T., et al. (1994). A case management system for coronary risk factor modification following acute myocardial infarction. *Annals of Internal Medicine, 120,* 721–729.

Emmons, K. M., & Goldstein, M. G. (1992). Smokers who are hospitalized: A window of opportunity for cessation interventions. *Preventive Medicine, 21,* 262–269.

Esterberg, M. L., & Compton, M. T. (2005). Smoking behavior in persons with a schizophrenia-spectrum disorder: A qualitative investigation of the transtheoretical model. *Social Science and Medicine, 61*(2), 293–303.

Fiore, M. C., Jaén C. R., Baker, T. B., Bailey, W. C., Benowitz, N. L., Curry, S. J., et al. (2008). *Treating tobacco use and dependence: 2008 update.* Clinical Practice Guideline. Rockville, MD: Public Health Service, US Department of Health and Human Services.

Goldman, L., Garber, A. M., Grover, S. A., & Hlatky, M. (1996). Taskforce 6: Cost-effectiveness of assessment and management of risk factors. *Journal of the American College of Cardiology, 27,* 1020–1030.

Hennrikus, D. J., Lando, H. A., McCarty, M. C., Klevan, D., Holtan, N., Huebsch, J. A., et al. (2005). The TEAM project: The effectiveness of smoking cessation intervention with hospital patients. *Preventive Medicine, 40,* 249–258.

Houston Miller, N., Smith, P. M., DeBusk, R. F., Sobel, D. S., & Taylor, C. B. (1997). Smoking cessation in hospitalized patients: Results of a randomized trial. *Archives of Internal Medicine, 157,* 409–415.

Killen, J. D., Fortmann, S. P., Newman, B., & Varady A. (1990). Evaluation of a treatment approach combining nicotine gum with self-guided behavioural treatments for smoking relapse prevention. *Journal of Consulting and Clinical Psychology, 58,* 85–92.

King, A. C., Taylor, C. B., Haskell, W. L., & DeBusk, R. F. (1989). Influence of regular exercise on psychological health: A randomized controlled trial of healthy, middle-aged adults. *Health Psychology, 8,* 305–324.

Marlatt, G. A., & Gordon, J. R. (Eds.). (1985). *Relapse prevention: Maintenance strategies in the treatment of addictive behaviors.* New York: Guilford.

Messer, K., Mills, A. L., White, M. M., & Pierce, J. P. (2008). The effect of smoke-free homes on smoking behavior in the US. *American Journal of Preventive Medicine, 35*(3)*,* 210–216.

Møller, A. M., Villebro, N., Pedersen, T., & Tønnesen, H. (2002). Effect of preoperative smoking intervention on postoperative complications: A randomized clinical trial. *Lancet, 359*(9301), 114–117.

Ossip-Klein, D., Parker, S., Bigelow, G., Curry, S., & Kirkland, S. (1986). Classification and assessment of smoking behavior. *Health Psychology, 5*(Suppl), 3–11.

Pierce, J. P., Gilpin, E. A., & Farkas, A. J. (1998). Can strategies used by statewide tobacco control programs help smokers make progress in quitting? *Cancer Epidemiology, Biomarkers and Prevention, 459,* 459–464.

Registered Nurses Association of Ontario. (2007). *Integrating smoking cessation into daily nursing practice.* Retrieved May 17, 2010, from http://www.rnao.org/bestpractices/PDF/BPG_smoking_cessation.pdf.

Rice, V. H., & Stead, L. F. (2008). Nursing interventions for smoking cessation. *Cochrane Database of Systematic Reviews,* Issue 1, Art. CD001188.

Rigotti, N. A., Munafo, M. R., & Stead, L. F. (2008). Smoking cessation for hospitalized smokers: A systematic review. *Archives of Internal Medicine, 168*(18), 1950–1960.

Shiffman, S., Brockwell, S. E., Pillitteri, J. L., & Gitchell, J. G. (2008). Use of smoking-cessation treatments in the United States. *American Journal of Preventive Medicine, 34*(2), 102–111.

Smith, P. M., & Burgess, E. (2009). Smoking cessation initiated during hospital stay for patients with coronary artery disease: A randomized controlled trial. *Canadian Medical Association Journal, 180*(13), 1297–1303.

Smith, P. M., Cameron, R., McDonald, P., Kawash, B., Madill, C., & Brown, K. S. (2004). Structuring telephone counselling for population-based smoking cessation. *American Journal of Health Behavior, 28,* 231–241.

Smith, P. M., Kraemer, H. C., Houston Miller, N., Taylor, C. B., & DeBusk R. F. (1999). In-hospital smoking cessation programs: Who responds, who doesn't? *Journal of Consulting and Clinical Psychology, 67*(1), 19–27.

Smith, P. M., Reilly, K. R., Houston Miller, N., DeBusk, R. F., & Taylor, C. B. (2002). Application of a nurse-managed inpatient smoking cessation program. *Nicotine and Tobacco Research, 4,* 211–222.

Smith, P. M., & Taylor, C. B. (2006). *Implementing an inpatient smoking cessation program.* Mahwah, NJ: Lawrence Erlbaum.

Taylor, C. B., Bandura, A., Ewart, C. K., Houston Miller, N., & DeBusk, R. F. (1985). Exercise testing to enhance wives' confidence in their husbands' cardiac capability soon after clinically-uncomplicated acute myocardial infarction. *American Journal of Cardiology, 55*(6), 635–638.

Taylor, C. B., Houston Miller, N., Herman, S., Smith, P. M., Sobel, D., Fisher, L., et al. (1996). A nurse-managed smoking cessation program for hospitalized smokers. *American Journal of Public Health, 86,* 1557–1560.

Taylor, C. B., Houston Miller, N., Killen, J. D., & DeBusk, R. F. (1990). Smoking cessation after acute myocardial infarction: Effects of a nurse-managed intervention. *Annals of Internal Medicine, 113,* 118–123.

US Department of Health and Human Services. (2004). *The health consequences of smoking: A report of the Surgeon General.* Atlanta: Centers for Disease Control and Prevention, National Centre for Chronic Disease Prevention and Health Promotion. Office on Smoking and Health. Retrieved May 5, 2010, from http://www.cdc.gov/tobacco/data_statistics/sgr/2004.

Wagner, E. H., Curry, S. J., Grothaus, L., Saunders, K. W., & McBride, C. M. (1995). The impact of smoking and quitting on health care use. *Archives of Internal Medicine, 155,* 1789–1795.

Walsh, R. A. (2008). Over-the-counter nicotine replacement therapy: A methodological review of the evidence supporting its effectiveness. *Drug and Alcohol Review, 27,* 529–547.

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Patricia M. Smith, PhD, is Associate Professor, Division of Human Sciences, Northern Ontario School of Medicine, Thunder Bay, Ontario, Canada. Linda Corso, MA, BScN, RN, is Principal, InfoFinders, Waterloo, Ontario. K. Stephen Brown, PhD, is Professor, Department of Statistics and Actuarial Science, and Director of Biostatistics, Propel Centre for Population Health Impact, University of Waterloo, Ontario. Roy Cameron, PhD, is Professor, Department of Health Studies and Gerontology, and Executive Director, Propel Centre for Population Health Impact, University of Waterloo.

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Happenings

Developing a Program of Research for an Applied Public Health Chair in Public Health Education and Population Intervention Research

Marjorie MacDonald

In 2008 the Canadian Institutes of Health Research (CIHR) Institute of Population and Public Health (IPPH), in partnership with the Public Health Agency of Canada and the Centre de Recherche en Prevention de l'Obésité, announced the funding of 15 Applied Public Health Research Chairs across Canada. This initiative has five objectives: to support nationally relevant and innovative public/population health intervention research and knowledge translation; to foster strong linkages between the research chairs and the public health system; to support the development of graduate public health programs; and to educate and mentor current and future public health researchers, practitioners, and policy-makers.

Among the Chairs, many disciplines are represented. I was fortunate enough to be one of two nurses in Canada to receive this award. Because public health (PH) work is inherently interdisciplinary, the work of the Chairs is also interdisciplinary; however, PH nurses represent the largest segment of the PH workforce, so it is critical that a nursing perspective be brought to CIHR's collective capacity-building effort in PH. I feel privileged to be able to contribute to this through my mentoring of nursing graduate students and by participating in the development of a graduate diploma in Public Health Nursing. This will be a stream in the Master of Public Health program at the University of Victoria's new School of Public Health and Social Policy, which will function in close collaboration with the School of Nursing.

Public Health Systems Renewal

The Chair award also provides an opportunity to help foster the renewal of the PH system in Canada. Several reports have raised concerns that the

PH infrastructure in Canada has been eroded and cannot respond effectively to PH emergencies or address changing PH issues in the population (e.g., Canadian Institutes of Health Research, 2003; Krever Commission, 1997; National Advisory Committee on SARS and Public Health, 2003). Recommendations include strengthening infrastructures, supporting effective PH service delivery, collaborating beyond PH with the health-care system at large and with other sectors, and defining essential functions of PH.

Framework for Core Functions in Public Health

The Framework for Core Functions in Public Health is a component of the plan to strengthen PH in British Columbia (Ministry of Health Services, Population Health and Wellness, 2005). This framework identifies the PH services and supports that health authorities are expected to provide. These are as follows. *Twenty-one core public health programs* in four broad areas: (a) health improvement (e.g., reproductive health, healthy development, healthy communities, healthy living, mental health promotion, food security); (b) disease, injury, and disability prevention (e.g., chronic disease; unintentional injury; violence, abuse, and neglect; problematic substance use and mental health problems; communicable diseases; dental disease; disability; adverse effects of the health system); (c) environmental health (e.g., water and air quality, food safety, community sanitation); and (d) health emergency management (e.g., prevention and mitigation, preparedness, response and recovery). *Public Health Strategies* that will be used to implement core programs and work with communities, including: health promotion, health protection, preventive interventions, and health assessment/disease surveillance. *Lenses* — a population lens and an equity lens are applied to all elements of the framework to address health inequities and ensure that the health needs of particular groups and the overall population are met. *System Capacity Requirements* comprise those supportive infrastructure elements that are needed to deliver core programs, including competent and well-trained staff, public health information systems, and research to support innovation and inform policy and practice improvement.

The Core Public Health Functions Research Initiative

The launch of this framework created an opportunity to develop a research program to study its implementation and impact in the province. Dr. Trevor Hancock, a well-known health promotion leader, practitioner, and advocate, was the chief architect of this framework in the BC Ministry of Health Services. We joined forces to establish and co-lead the Core Public Health Functions Research Initiative (CPHFRI — pronounced see-free; http://web.uvic.ca/~cphfri/). This initiative makes up one of three streams of research in my Applied Public Health Chair. The other two streams, not discussed here, are adolescent health promotion (promotion of health literacy and sexual health and prevention of smoking and substance misuse) and conceptualizing advanced practice in public health nursing.

CPHFRI's Goals

To develop our research program, we received two infrastructure grants from the Michael Smith Foundation for Health Research, which allowed us to define a research agenda, develop cohesion as a team to collaborate on the research, and leverage significant national funding. CPHFRI brings together a multidisciplinary team of academics with strong nursing leadership and national, provincial, and local PH decision-makers and practitioners. Our specific goals, grounded in an overarching complex adaptive systems perspective, are to: (a) advance the field of PH services research in Canada by implementing a consensus-based research agenda and through the application and development of innovative research methodologies for studying complex systems; (b) broadly inform PH systems renewal in Canada, which in turn will contribute to improving population health and reducing health inequities; (c) contribute to better integration and linking of public/population health services and health services more broadly, particularly primary care; and (d) train expert public/population health researchers. The CPHFRI program incorporates a focus on knowledge translation, health equity, partnerships, and methodological innovation.

In each of our projects, we have built in training opportunities for graduate students, including three doctoral fellowships and one postdoctoral fellowship, as well as several research assistantships to build capacity for PH researchers in nursing and other disciplines. The Chair funding supports two additional doctoral fellowships. Inherent in CPHFRI's goals is the intent to increase the capacity of decision-makers to use evidence (broadly defined) to improve PH policy and practice.

Progress to Date

CPHFRI has now completed three studies: (1) an exploration of the evidence-to-practice processes and the application of the equity lens in two core PH programs (food safety and prevention of unintentional injuries) across three health authorities (CIHR Knowledge to Action grant); (2) a study, led by Dr. Joan Wharf Higgins at the University of Victoria, to examine the influence of research evidence on decision-making in the development and implementation of the Healthy Living Core Program in two BC health authorities (CIHR Intervention

Research grant); and (3) a meta-narrative review led by Drs. Craig Mitton and Allan Best at the University of British Columbia to identify and synthesize existing knowledge-to-action conceptual models in a range of contexts to guide knowledge translation that will influence policy and practice (CIHR Knowledge Synthesis grant).

In addition to these three studies, we received a CIHR Meeting, Planning and Dissemination grant to hold a research symposium, Methods for Studying Complex Public/Population Health Interventions, in 2009 for team members, students, and others. Drawing on the premise put forward by the Population Health Intervention Research Initiative for Canada (PHIRIC — see http://www.cihr-irsc.gc.ca/e/38731.html) that public/population health interventions are, or operate within, complex adaptive systems, we explored the methodological implications of a complexity perspective in our symposium and presented a variety of research methods and techniques that we believe are congruent with a complexity perspective.

Renewal of Public Health Systems

Our current flagship project, the 5-year research program (CIHR Emerging Team Grant) The Renewal of Public Health Systems (RePHS — pronounced refs) has allowed us to expand our network of researchers and practitioners to Ontario. In British Columbia the leads are Marjorie MacDonald and Bernadette Pauly (University of Victoria) and Trevor Hancock (BC Ministry of Health Services), while in Ontario the leads are Ruta Valaitis (McMaster University) and Heather Manson (Ontario Agency for Health Promotion and Protection). The purpose of RePHS is to explore the implementation and impact of the Core Public Health Functions framework in British Columbia and the Public Health Standards in Ontario, and the significant contextual influences on the delivery of prevention programs for chronic diseases and sexually transmitted infections.

The near simultaneous roll-out of these policy-level PH interventions in two provinces provides an unparalleled opportunity to engage in a natural experiment of sorts to compare the process and outcomes in two jurisdictions with very different structures and governance mechanisms. Using a multi-site case-study design, we will be able to conduct within-province (among six health authorities in British Columbia and six health units in Ontario) and between-province comparisons. Within the overarching research questions related to implementation and impact, we are also exploring three cross-cutting themes: (1) the implications for PH human resources planning around workforce competency, skill development, and basic and continuing education; (2) the extent and impact of relationships between PH and primary care sectors; and (3) the extent to which an equity lens is integrated into the core programs/standards and the impact of this. We are currently completing the second year of this initiative.

A Public Health Services Research Agenda

The final project, currently underway within CPHFRI, is an initiative to develop a pan-Canadian PH services research (PHSR) agenda (CIHR Meeting, Planning and Dissemination grant). PHSR is an emerging subset of health services research. Funding for health services research is directed primarily at the health-care system at large, often not at PH services per se. Thus there is a knowledge gap with respect to public health services. At the 2009 Canadian Public Health Association Conference, we held a workshop to present the idea of developing a PHSR agenda for Canada. The session was very well attended and participants from across the country confirmed this need and expressed interest in participating in the process. To that end, we are holding an invitational Think Tank in Montreal in May 2011 to develop a PHSR agenda for Canada and to launch a pan-Canadian network of PHSR researchers.

Conclusions

Public health nursing has an important contribution to make to the development of knowledge about and the improvement of practice in public health services. Nursing leadership, within a strong interdisciplinary context, is evident in a program of research on public health systems renewal and core public health services under the CPHFRI umbrella. Embedded in multiple studies under my Applied Public Health Chair are research questions of great importance to explicating the day-to-day practice of PH nurses (and other practitioners) and their contributions to improving the health of the population.

References

Canadian Institutes of Health Research, Institute of Population and Public Health. (2003). *The future of public health in Canada: Developing a public health system for the 21st century.* Ottawa: Author. Retrieved September 12, 2006, from http://www.cihr-irsc.gc.ca/cgi-bin/print-imprimer.pl.

Krever Commission. (1997). *Commission of inquiry on the blood system in Canada: Final report.* Retrieved September 15, 2006, from http://www.hc-sc.gc.ca/ahc-asc/activit/com/krever_e.html.

Ministry of Health Services, Population Health and Wellness. (2005). *A framework for core functions in public health.* Victoria: Ministry of Health Services.

National Advisory Committee on SARS and Public Health. (2003). *Learning from SARS: Renewal of public health in BC.* Ottawa: Health Canada.

Marjorie MacDonald, RN, PhD, is Professor, School of Nursing, University of Victoria, British Columbia, Canada, and CIHR/PHAC Applied Public Health Chair in Public Health Education and Population Intervention Research.

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Résumé

Contribution du personnel infirmier et résultats des soins hospitaliers : analyse empirique des hôpitaux de soins de courte durée de l'Ontario

Gail Tomblin Murphy, Stephen Birch, Linda O'Brien-Pallas, George Kephart, Adrian MacKenzie

Les auteurs de cette étude, qui porte sur les hôpitaux de soins de courte durée de l'Ontario (Canada), ont analysé le lien existant entre le degré d'utilisation des soins infirmiers (mesuré en heures de soins par jour-patient), le nombre de jours d'hospitalisation et les résultats pour les patients, dans le but de déterminer si une contribution accrue du personnel infirmier est associée à un raccourcissement des séjours hospitaliers et si, dans le cas de l'affirmative, ce raccourcissement est obtenu sans que cela nuise aux résultats pour la santé. Au terme de leur analyse, qui tient compte de l'effectif infirmier, de la charge de travail, des caractéristiques de la collectivité et du type d'hôpital, les auteurs ont constaté que le nombre d'heures de soins infirmiers avait une incidence négative significative sur la durée des séjours hospitaliers, et ce, sans incidence notable sur la satisfaction des patients ni sur les taux de mortalité à l'hôpital ou de réadmission. Également, les auteurs n'ont observé aucun signe d'une détérioration de la santé des patients pouvant être associée à des séjours hospitaliers plus courts. Ce type d'information est important pour le déploiement d'une palette efficace de ressources en santé ainsi que pour déterminer les besoins à venir en matière de ressources humaines afin de pourvoir à ceux-ci de façon efficace.

Mot clé : résultats pour les patients

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Nursing Inputs and Outcomes of Hospital Care: An Empirical Analysis of Ontario's Acute-Care Hospitals

Gail Tomblin Murphy, Stephen Birch, Linda O'Brien-Pallas, George Kephart, Adrian MacKenzie

The authors analyze the association between intensity of nursing care (as measured by nursing hours per patient day), hospital bed days, and patient outcomes in acute-care hospitals in the province of Ontario, Canada, to determine whether higher levels of nursing inputs are associated with shorter lengths of stay (LOS) and, if so, whether these shorter LOS are achieved at the expense of health outcomes. After controlling for supply of nurses, workload, community characteristics, and hospital type, the authors found that nursing hours per patient day had a significant negative effect on LOS but had no significant effect on patient satisfaction, hospital mortality, or readmission rates. Further, there was no evidence that shorter than expected LOS were associated with poorer patient health. Such information is relevant for efforts to deploy efficient mixes of health-care resources and to identify future human resource requirements to support the efficient provision of health human resources.

Keywords: nursing planning, health human resources planning, patient outcomes, acute care, health-care production

Introduction

In an era when both the costs of funding the health-care system and public expectations regarding the system's performance are continually rising, health-care providers, researchers, and policy-makers alike constantly struggle to ensure that the system is as efficient and effective as possible. Given the relative labour intensity of health services, it is understandable that the attention of health-care decision-makers is often focused on changing the level of human resources. However, decisions affecting health human resources (HHR) are often made without consideration of their relationship to other health-care resources (Vujicic, 2003). Little attention is given to the notion of human resources as inputs in a health-care production function in which input-output relationships (or the rate of productivity of human resources) may be sensitive to the levels of other health-care inputs such as equipment and facilities (Birch, O'Brien-Pallas, Alksnis, Tomblin Murphy, & Thomson, 2003). Decisions about the level and deployment of HHR are often made in response to short-term financial pressures without any evidence of the effects of changing their use on the production of services and health outcomes.

The aim of this work was to contribute to the evidence base in the field by investigating the relationships between patient length of stay (LOS) in hospital, exposure to nursing care, readmission rates, patient satisfaction levels, and patient health status.

A number of studies have investigated the relationship between levels of nursing inputs and various patient-care indicators, and a number have found that higher registered nurse (RN) employment is associated with lower costs and better utilization and outcomes (Blegen, Goode, & Reed, 1998; Clarke & Aiken, 2003; Needleman, Buerhaus, Mattke, Stewart, & Zelevinsky, 2002; Sochalski, 2001, 2004. Lichtig, Knauf, and Milholland (1999) found that higher percentages of RNs and more nursing hours per acuity-adjusted patient day were associated with lower rates of pressure ulcers, pneumonia, post-operative infections, and urinary tract infections (UTIs) as well as shorter LOS. Needleman and colleagues (2002) found that, among medical and surgical patients, increased RN inputs were associated with lower rates of UTIs, while Whitman, Kim, Davidson, Wolf, and Wang (2003) found an inverse relationship between nurse staffing and rates of falls, medication errors, and use of restraints. In her review of the literature on nurse staffing and outcomes, Unruh (2008) found that shorter LOS were associated with more RN hours (Brown, Sturman, & Simmering, 2002; Shamian, Hagen, Hu, & Fogarty, 1994), lighter workloads (Behner, Fogg, Fournier, Frankenbach, & Robertson, 1990), and higher nurse-patient ratios (Pronovost, 1999), and that increased RN hours per patient day were associated with reduced risk of pneumonia (Cho, Ketefian, Barkauskas, & Smith, 2003). Unruh also cites two 2002 studies, by Aiken, Clarke, Sloane, Sochalski, and Silber (2002) and Needleman and colleagues (2002), which found that a larger proportion of hours per patient by RNs and a larger number of hours of RN care were associated with shorter LOS; lower rates of UTIs, pneumonia, GI bleeding, shock, and cardiac arrest; and fewer deaths within 30 days of admission.

These studies have generally focused on indicators of quality of care in hospitals and average LOS. However, adverse events might not be confined to the inpatient stay if reductions in LOS were achieved through premature discharge. Put another way, if greater nursing inputs are found to represent a substitution for hospital days, and hence a different mix of hospital inputs, we need to consider whether this substitution is achieved at the cost of reduced quality of care or poorer patient outcomes (measured in a variety of ways). Greater nursing inputs (such as having more nurses deployed in the delivery of care on a day-to-day basis) can be used to increase hospital throughput, but this increased throughput could involve patients being discharged at an earlier stage of recovery, increasing the risk of readmission, and/or reductions in quality of inpatient care as pressure mounts to "cut corners" to achieve required throughput rates. In this investigation, we consider whether greater use of hospital-based nursing is associated with shorter LOS and whether such reductions have adverse effects on patient outcomes, including readmission rates, mortality, patient satisfaction, and patient self-assessed health status.

Research Questions

The study addressed two research questions: 1. *Are higher levels of nursing inputs (as measured by nursing hours per patient day) associated with shorter LOS?* 2. *Is increased exposure to hospital nursing care (e.g., as in question 1) associated with poorer outcomes as measured by hospital mortality rates, hospital readmission rates, patient satisfaction, and patient health?*

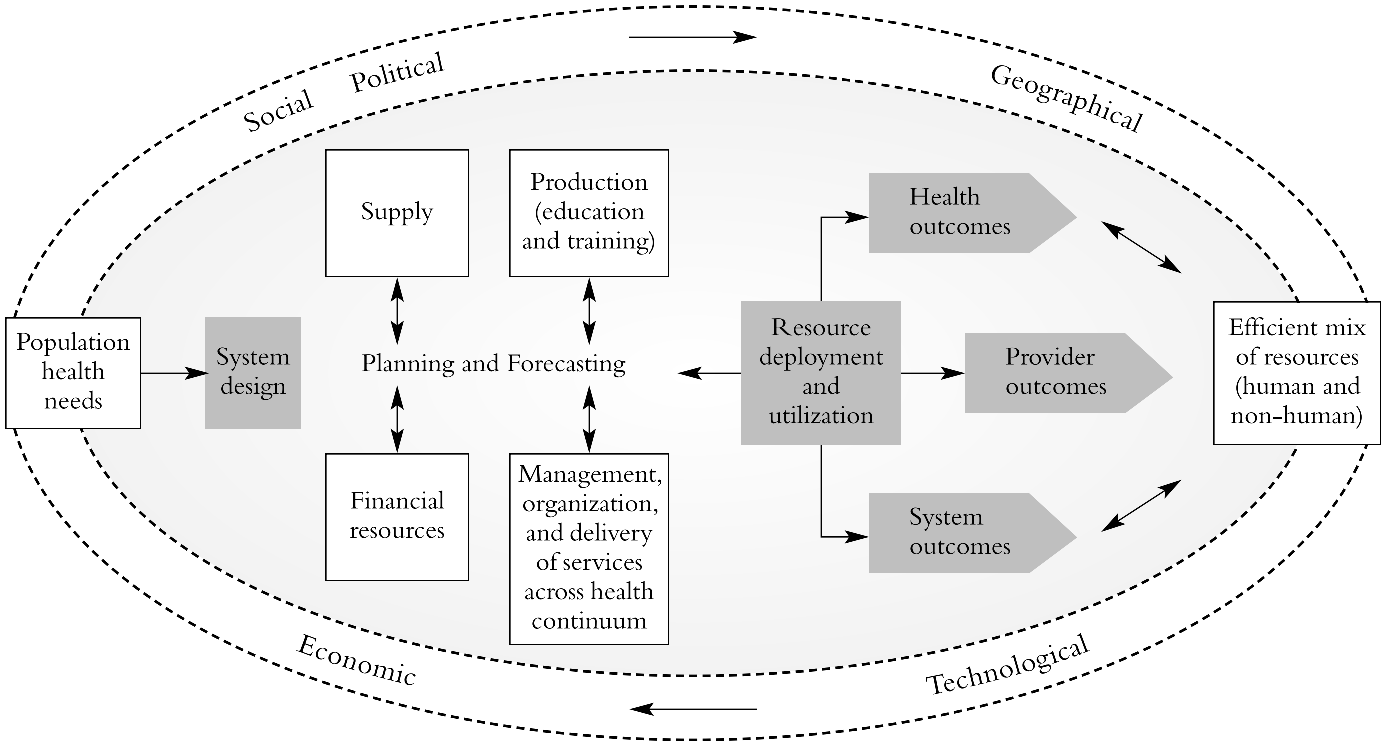
Methods

Conceptual Framework

This work was informed by the conceptual framework adopted by Canada's Federal/Provincial/Territorial Advisory Committee on Health Delivery and Human Resources (2005) (see Figure 1). This framework depicts the dynamic nature of the relationships among the many components of the health-care system. In traditional approaches to planning, these components have been treated, often implicitly, as separate, independent, and in many cases invariant over time. It was the aim of this work to contribute to the base of evidence on the relationships between some of these components.

The framework's outer band indicates that health human resources planning (HHRP) should consider relevant social, political, geographical, technological, and economic factors, including, for example, the capacity of the jurisdiction to support health-care and policy decisions on methods of funding health services. We accounted for as many of these factors as possible in our analysis. Across all sectors of care (system design), HHRP must consider optimal ways of deploying and managing the current practice pool of providers, noting that supply is maintained by the production of new providers and that the flow of services from that supply is influenced by the level of financial resources applied and the management and organization (e.g., models) of service delivery. The flow of services from that supply of human resources will also be influenced by the deployment (e.g., the number of nurse hours made available per patient day) and utilization (e.g., the number of patient days of hospital care used) of these resources. These human resources, when supported by

Figure 1 ***Conceptual Framework***



Source: O'Brien-Pallas & Tomblin Murphy (2006) non-human resources (e.g., facilities and technology), yield patient, provider, and system outcomes that are optimized when the there is an efficient mix of human and non-human resources in the jurisdiction.

We consider the analysis in two parts, one for each of the research questions presented above. In the first part we investigate the association, at the hospital level, between level of nursing inputs (as measured by nursing hours per patient day) and average patient LOS, to determine whether increased "intensity" of hospital care is associated with fewer patient days in hospital; this may indicate a substitution of nursing inputs for hospital days. In the second part of the analysis we determine whether any such substitution (i.e., the resulting shorter LOS) is achieved at the cost of poorer outcomes, as measured by mortality, readmission, patient satisfaction, and patient health.

Part 1: Relationship Between Nursing Intensity and Patient LOS

The relationship between nursing intensity and patient LOS is investigated at the hospital level using a logistic regression model, with LOS as the dependent variable. To better understand this relationship, a number of control variables are included in an attempt to separate the influence of the level of health needs of patients at the hospital, the availability of hospital care, the type of hospital, and the mix of patients at the hospital from the effects of nursing intensity. Measures of patient health needs include age (proportion over age 65), sex (proportion of female vs. male), income (proportion in the lowest income quintile), education (proportion who did not complete high school), employment status (proportion not employed), and overall standardized mortality rate. Data for the control variables are available from Statistics Canada at the Public Health Unit (PHU) level.[1] The exceptions are unemployment and standardized mortality rate, which are based on 1991 census data and the 1996 records of the Registrar General's office, respectively. The mean sample size per PHU for the survey was 1,142 respondents.

Because individuals living in a particular PHU may attend hospitals located in areas covered by other PHUs, one cannot simply assume that the demographic characteristics of the patients in a particular hospital (for example, age and sex distributions or income levels) will match those of the PHU in which the hospital is located. We therefore constructed hospital catchment populations to estimate hospital-level variables as weighted averages of the PHU-level variables, weighted according to the proportion of inpatients coming from each PHU.

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[1] These variables were derived by Statistics Canada from the 1996 National Population Health Survey (NPHS) and 2001 Canadian Community Health Survey (CCHS).

Table 1 ***Variables and Data Sources for LOS — Nursing Intensity Model***

Variable	**Type**	**Source**
Average patient LOS	Dependent	StatsCan (NPHS/CCHS)
Nursing hours per patient day	Independent	CIHI MIS
Age (proportion of hospital catchment population over age 65)	Control	StatsCan (NPHS/CCHS)
Sex (proportion of hospital catchment population who were female)	Control	StatsCan (NPHS/CCHS)
Income (proportion of hospital catchment population in the lowest income quartile)	Control	StatsCan (NPHS/CCHS)
Employment status (proportion of hospital catchment population unemployed)	Control	StatsCan (Census)
Education (proportion of hospital catchment population without high school diploma)	Control	StatsCan (NPHS/CCHS)
Population mortality rate (age-standardized mortality rate in hospital catchment population)	Control	Registrar General
Hospital type (small, large, or teaching)	Control	CIHI DAD
Patient mix (hospital's mean RIW[a] for adult patients)	Control	CIHI DAD
Availability of hospital care (number of nurses per 10,000 hospital catchment population)	Control	CIHI MIS

[a] RIW = resource intensity weight

Data on patient mix and LOS were taken from the 2001 Discharge Abstract Database (DAD) of the Canadian Institute of Health Information (CIHI) (2001a). Data on the number of nurses per 10,000 population and nursing hours per patient day were obtained from Management Information System data (CIHI, 2001c). Patient satisfaction information was obtained from the Hospital Report (CIHI, 2001b).[2]

Table 1 summarizes the dependent and independent (including control) variables included in this regression model as well as the data sources from which each was derived.

Part 2: Relationship Between Nursing Care and Outcomes

As in part 1, the relationships between patient exposure to nursing care and, respectively, mortality, readmission, and patient satisfaction are investigated at the hospital level using logistic regression models. The relationship between patient LOS and patient health is investigated at the individual level because it was felt that institution-level changes in patient health would be difficult to measure or detect. In addition, this relationship is investigated using two different measures of patient health (and thus two different models): self-assessed health status, and Health Utility Index (HUI) score. Self-assessed health status was chosen as an indicator of patient health because it has been shown to correlate well with other, more objective, health measures, including physician assessments (Martin, Schoeni, Freedman, & Andreski, 2007; Miilunpalo, Vuori, Oja, Pasanen, & Urponen, 1997; Reijneveld & Stronks, 2001). There is some subjectivity inherent in this measure, however; it was therefore felt that also investigating the relationship between patient health and LOS using one of the more objective measures of patient health such as the HUI would be informative. To facilitate the interpretation of results, the HUI score was dichotomized to simply indicate whether patients were "healthy." An ordinal logit model (Hosmer & Lemeshow, 2000) was used to estimate the equation for self-assessed health status, because this is an ordered, categorical variable. A logistic model (Hosmer & Lemeshow, 1989) was used for regression involving the dichotomized HUI score.

The regressions run at the hospital level (patient LOS regressed against, in turn, hospital mortality, readmission, and patient satisfaction) include the same control variables used to investigate the relationship between LOS and nursing intensity in part 1 of the analysis, described above. The regressions run at the individual level (patient LOS against self-assessed health status and against HUI score) also include many similar control variables, although these are measured at the individual

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[2] While the other hospital data sources included 122 acute-care facilities in Ontario, the Hospital Report included data on 65 of these hospitals.

Table 2 ***Variables and Data Sources for Nurse Intensity-Hospital Mortality, Nurse Intensity-Patient Satisfaction, and Nurse Intensity-Readmission Models***[a]

Dependent Variable	**Source**	**Independent Variable**	**Source**
Hospital mortality rate (% of adult patients who died while in hospital)	CIHI DAD	Nurse intensity (nursing hours per patient day)	CIHI MIS
Patient satisfaction (% of adult patients reporting satisfaction with unit-based care [nursing care])	CIHI Hospital Report		
Readmission (% of adult patients readmitted within 30 days of discharge for same diagnosis — dichotomized as less than 1% or 1% and higher)	CIHI DAD		

[a] Each of these models used the same control variables listed in Table 1; these variables are omitted here for the sake of brevity.

Table 3 ***Variables for Increased LOS/Patient Health Models***

Variable	**Type**	**Source**
Self-assessed health status (excellent, very good, good, fair/poor) OR HUI score (less than 0.8; 0.8 and higher)	Dependent	StatsCan (NPHS/CCHS)
Difference between actual and expected number of hospital days	Independent	StatsCan (NPHS/CCHS)[a]
Age (5-year groups for those over 20; ages 75 and up grouped together)	Control	StatsCan (NPHS/CCHS)
Sex	Control	StatsCan (NPHS/CCHS)
Income (by quintile)	Control	StatsCan (NPHS/CCHS)
Employment status (employed; unemployed or out of labour force)	Control	StatsCan (NPHS/CCHS)
Education (no high school diploma, high school diploma, community college or trade school diploma, university degree)	Control	StatsCan (NPHS/CCHS)
Residential location (metropolitan urban, non-metropolitan urban, rural)	Control	StatsCan (NPHS/CCHS)

[a] Estimated using double-hurdle model based on NPHS/CCHS data as described above.

level — patient age, sex, income status, education level, and employment status. They also include the type of location of the patient — rural, non-metropolitan area urban, or metropolitan area urban — as a measure of the patient's urban/rural residency. Each of these variables was obtained from the Canadian Community Health Survey (CCHS).

Because hospital LOS is determined in part by individual health status, with sicker people being more likely to have been admitted to hospital, estimation of a simple equation to explain variations in health status between individuals would be subject to endogeneity bias (i.e., differences in health are expected to be associated with differences in number of hospital days). To account for this endogenous relationship in our analysis, we first estimated an equation for the *expected* number of hospital days, based on an individual's characteristics, and then compared this value to the reported number of hospital days to derive a variable for excess number of hospital days. In other words, we examined whether the individual received more or less hospital care than the average respondent with the same characteristics associated with "need." By entering this into the equation for health status, we were able to examine whether variations in the excess number of days of care received explained variations in health status. Data from the 1996 National Population Health Survey (NPHS) (Statistics Canada, 1997) were used to derive the equations for expected use, with data from the 2001 CCHS (Statistics Canada, 2001) entered into the equations to generate the expected use in 2001, conditional on the individual's characteristics in 2001.

The difference between observed and expected hospital days for 2001 was incorporated as the independent variable in the equation for explaining variations in individual health status alongside the control variables described above. The variables and data sources used in the regression models for part 2 of the analysis are shown in Tables 2 and 3.

As the NPHS and the CCHS have a complex multi-stage stratified sampling design (Béland, 2002; Tambay & Catlin, 1995), the regressions were weighted using survey sample weights to adjust for unequal probabilities of inclusion in the sample. Standard errors for the regression coefficients were estimated as the standard deviation of the parameter estimates produced from the regressions being run for each of the survey's 500 sets of bootstrap weights.

Results

Means and standard deviations for the variables used in the hospital-level analyses are presented in Table 4. Recall that these variables are measured at the hospital level. The estimated coefficients for the equations for LOS, readmission, mortality, and patient satisfaction[3] are presented in Table 5.

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[3] As noted above, the patient satisfaction analysis was based on a subset of these data.

Table 4 ***Descriptive Statistics for Mortality, LOS, and Readmission Models***

Variable Name	***Mean***	***SD***	***Range***
Nurses/10,000 population	43.019	34.092	13.51–282.43
Patient mix (mean RIW[a] for adult patients)	1.315	0.272	0.90–2.96
Lowest income quartile	2.664	0.726	1.41–4.77
Age (over 65 years)	17.758	2.551	11.23–23.46
Sex (female)	50.322	1.580	35.82–52.17
Less than high school	12.841	2.975	5.55–19.55
Unemployment rate	6.829	2.155	3.69–11.40
Mortality rate	1.087	0.096	0.81–1.26
Worked hours/patient day	6.685	1.446	2.99–10.63
Hospital-level mortality	4.310	1.545	0–10.27
LOS	6.766	1.415	4.34–14.36
	Frequencies		
Hospital type: small	52		
Hospital type: large	63		
Hospital type: teaching	7		
Readmission: proportion over 1%	77.9%		

[a] RIW = resource intensity weight

Table 5 ***Regression Results for Mortality, LOS, Patient Satisfaction, and Readmission***

Variable	**LOS** **β** **(SE)**	**Readmission Rate** **β** **(SE)**	**Mortality Rate** **β** **(SE)**	**Patient Satisfaction** **β** **(SE)**
Nurses/10,000 population	0.003 (0.003)	-0.013 (0.008)	0.008 (0.004)	-0.009 (0.011)
Patient mix (mean RIW for adult patients)	5.635** (0.697)	1.329 (1.794)	4.064** (1.013)	-2.684 (1.849)
Lowest income quartile	-0.268 (0.159)	0.197 (0.476)	0.039 (0.231)	0.326 (0.175)
Age (over 65 years)	-0.018 (0.037)	-0.015 (0.122)	0.063 (0.054)	0.125** (0.043)
Sex (female)	-0.037 (0.061)	0.011 (0.187)	-0.052 (0.088)	-0.184 (0.117)
Less than high school	-0.002 (0.047)	-0.324* (0.160)	-0.025 (0.068)	0.022 (0.052)
Unemployment rate	0.049 (0.070)	-0.357 (0.230)	-0.361** (0.102)	-0.156 (0.096)
Mortality rate	1.785 (1.794)	11.422 (7.15)	3.619 (2.610)	0.280 (1.743)

Hospital type: large	0.493 (1.245)	1.067 (3.92)	2.220 (1.811)	-3.347 (2.487)
Hospital type: teaching	9.743** (1.675)	1.645 (5.166)	-0.863 2.437	-3.132 (2.506)
Interaction teaching* RIW	-5.570** (0.993)	-1.021 (2.811)	-1.721 (1.445)	2.248 (1.936)
Interaction large* RIW	-0.724 (0.971)	-0.050 (3.00)	-2.417 (1.412)	2.156 (2.032)
Worked hours/patient day	-0.177** (0.065)	-0.287 (0.183)	0.173 (0.095)	-0.003 (0.100)
Adjusted R^2	0.595	0.173[b]	0.280	0.234
N	122	122	122	65

[a] RIW = resource intensity weight
[b] Cox & Snell R^2
* $p < 0.05$; ** $p < 0.01$

Table 6 *Ordinal Logit Regression Results for Self-Assessed Health*

Variable	Coefficient	Standard Error	95% Confidence Interval		Odds Ratio	
Actual nights in hospital/ expected nights in hospital	-0.020	0.004	-0.028	-0.013	0.980	**
Unemployed	-0.067	0.108	-0.279	0.145	0.935	
Not in labour force	-0.828	0.056	-0.937	-0.719	0.437	**
Non-metropolitan urban	0.211	0.042	0.128	0.294	1.235	**
Rural	0.062	0.035	-0.007	0.131	1.064	
Low-middle income	-0.130	0.130	-0.384	0.124	0.878	
Middle income	0.225	0.109	0.012	0.439	1.252	*
High-middle income	0.493	0.107	0.284	0.703	1.638	**
High income	0.749	0.106	0.540	0.957	2.114	**
High school diploma	0.496	0.052	0.395	0.598	1.643	**
Community college or trade school diploma	0.594	0.051	0.495	0.693	1.811	**
University degree	0.942	0.062	0.822	1.063	2.566	**
Pseudo-R-squared					0.0641	
N					25923	

* Significant at $\alpha = 0.10$
** Significant at $\alpha = 0.05$
Note: Values adjusted for age, sex, and age-sex interaction.

In the LOS model (Table 5, column 1), the coefficient for worked nursing hours per patient day is negative and statistically significant ($p < 0.05$), indicating that hospitals with greater intensity of nursing have shorter LOS, other things being equal. These estimates suggest that higher levels of nursing inputs support reductions in other inputs, in this case hospital bed days.

For hospital readmission (Table 5, column 2), the variable for worked nursing hours per patient day is negatively associated with the probability of readmission rates being greater than 1% of all adult admissions, although this is not significant. Consequently there is no evidence that higher levels of nursing intensity, and hence shorter average LOS, is associated with higher rates of readmission.

Similarly, there is no evidence that responses to increasing nursing inputs, such as reduced LOS, have any impact on hospital mortality (Table 5, column 3) — although the coefficient on hospital mortality is positive, it is not significantly different from zero. Finally, there is no significant association between nursing hours per inpatient day and patient satisfaction (Table 5, column 4). Although the coefficient is positive, implying greater satisfaction associated with greater inputs of nursing care, the association is not significant.

These results suggest that hospitals with higher levels of nursing input per patient day tend to have shorter average LOS after controlling for variations in population and patient characteristics. However, there is no evidence that this is associated with poorer patient outcomes as measured by readmission, hospital mortality, or patient satisfaction.

Turning to the individual-level analysis, Tables 6 and 7 report the estimated coefficients for the equations for self-assessed health status (using an ordinal logit procedure) and probability of HUI > 0.8 (using a logit procedure), respectively.

Goodness of fit is much lower in these equations than in the hospital-based analysis, as would be expected for an individual-level analysis. In terms of self-assessed health status, there is a small but statistically significant negative correlation between the reported-expected hospital days variable and better health. This implies that individuals who have more hospital days than one would expect, given their characteristics, are observed to be significantly less healthy in terms of self-assessed health. However, the size of the coefficient is very small, which raises questions about the practical significance of this finding (the associated odds ratio indicates that for every "extra" hospital day experienced, the patient's odds of having poorer health status increase by only 2%). Moreover, because we cannot be sure that we have fully quantified the need for nursing services in the estimated equation for individual-level hospital days (i.e., there may be residual need variations not captured in our

Table 7 ***Logistic Regression Results for HUI Score > 0.8***

Variable	**Coefficient**	**Standard Error**	**95% Confidence Interval**		**Odds Ratio**	
Actual nights in hospital/ expected nights in hospital	-0.014	0.004	0.980	0.995	0.987	⋆⋆
Unemployed	-0.374	0.150	0.393	0.982	0.687	⋆
Not in labour force	-1.138	0.063	0.202	0.451	0.327	⋆⋆
Non-metropolitan urban	0.199	0.068	1.111	1.376	1.244	⋆⋆
Rural	0.072	0.047	0.999	1.184	1.091	
Low-middle income	0.290	0.147	0.977	1.555	1.266	
Middle income	0.555	0.123	1.355	1.837	1.596	⋆⋆
High-middle income	0.808	0.120	1.912	2.382	2.147	⋆⋆
High income	1.029	0.127	2.414	2.913	2.664	⋆⋆
High school diploma	0.358	0.065	1.317	1.571	1.444	⋆⋆
Community college or trade school diploma	0.440	0.066	1.423	1.683	1.553	⋆⋆
University degree	0.733	0.080	1.939	2.252	2.096	⋆⋆
Pseudo-R-squared					0.1068	
N					25968	

⋆ Significant at $\alpha = 0.10$
⋆⋆ Significant at $\alpha = 0.05$
Note: Values adjusted for age, sex, and age-sex interaction.

double-hurdle procedure), this small reduction in health status may well be a result of unmeasured need rather than exposure to "extra" hospital care. Most of the other coefficients carry the expected sign and are statistically significant.

The above results are generally replicated when the HUI score is used as the indicator of health status. As with self-assessed health status, individuals reporting more hospital days than expected are less likely to have a HUI score of 0.8 or higher, although, as above, the practical significance of this finding is called into question by the very small coefficient. Although fewer of the other variables are statistically significant, the signs are, in most cases, in the expected direction.

In summary, the findings for the individual-level analysis suggest that, far from being associated with lower levels of health, patients who have a smaller number of hospital days than expected tend to have higher levels of health status, other things being equal. In other words, the "null hypothesis" that there is no association between hospital days and self-assessed health status cannot be rejected. Given the limitations presented by the endogenous relationship between patient health status and time in hospital, as well as the relatively small size of the estimated coefficients on "excess days," we would not want to put too much emphasis on this finding. However, the individual-level analysis is consistent with the hospital-level analysis presented above, in that there is no evidence that shorter LOS are associated with poorer health, other things being equal.

Limitations

While the methods used to develop catchment areas and map data between hospitals and PHUs may serve as an important methodological contribution, they are not perfect and patient-level data would be preferable for this sort of analysis. Also, despite the strategies employed to deal with endogeneity, the probability of residual endogeneity remains, for two reasons. First, the models used to estimate the need for hospital days are not perfect in that they do not completely capture the "need" that individuals have for hospital services. Considerable unexplained variation remains, some of which might be due to unmeasured variation in need. Second, the effects of need variables are estimated using 1996 NPHS data, but the model is then applied to 2001 data on individual characteristics; longitudinal data rather than repeated cross-sectional data would have better suited our purposes, but were not available within project timelines. If residual endogeneity exists, any bias in the estimated effect of hospital days is expected to be negative because any unmeasured need is likely to increase the number of hospital days. Thus, if we had found that observed minus expected hospital days was associated with better health status, a finding of a positive association would be robust. However, finding a null or negative effect, as we did, we are not able to determine whether this is due to endogeneity bias or the existence of a negative relationship between "extra" hospital care and patient health. Finally, the dichotomizing of the HUI score as below 0.8 or 0.8 and higher, as opposed to a different value, was somewhat arbitrary; a sensitivity analysis would have been informative for this article but was not possible given the data and time constraints of the study.

Discussion and Conclusions

The findings suggest that differences in the deployment of nursing resources are associated with differences in other inputs. In particular, greater intensity of nursing inputs (as measured by nursing hours per patient day) is associated with shorter LOS after controlling for other factors. However, there was no evidence that this resulted in poorer patient outcomes as measured by higher rates of readmission, lower levels of patient satisfaction, or lower levels of self-assessed health. This information is of clear relevance for those considering the planning and deployment of HHR.

Greater attention needs to be paid to how changes in input levels affect levels of service delivery and patient outcomes. This cannot be determined in isolation from the available level of other inputs. The service levels and patient outcomes that can be delivered through the deployment of more beds, theatres, MRIs, or physicians will be determined by the number of nurses with which these inputs can be combined to generate service outputs and health outcomes. The results of this study highlight the infrastructural and organizational barriers that need to be addressed if HHRP is to be conducted in ways that meet the needs of populations.

References

Aiken, L. H., Clarke, S. P., Sloane, D. M., Sochalski, J., & Silber, J. H. (2002). Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction. *Journal of the American Medical Association. 288*(16), 1987–1993.

Behner, K. G., Fogg, L. F., Fournier, L. C., Frankenbach, J. T., & Robertson, S. B. (1990). Nursing resource management: Analyzing the relationship between costs and quality in staffing decisions. *Health Care Manage Review, 15*(4), 63–71.

Béland, Y. (2002). Canadian Community Health Survey — methodological overview. *Health Reports/Statistics Canada, Canadian Centre for Health Information, 13*(3), 9–14.

Birch, S., O'Brien-Pallas, L., Alksnis, C., Tomblin Murphy, G., & Thomson, D. (2003). Beyond demographic change in human resources planning: An extended framework and application to nursing. *Journal of Health Services Research and Policy, 8*(4), 225–229.

Blegen, M. A., Goode, C. J., & Reed, L. (1998). Nurse staffing and patient outcomes. *Nursing Research, 47*(1), 43–50.

Brown, M. P., Sturman, M. C., & Simmering, M. J. (2002). The benefits of staffing and paying more: The effects of staffing levels and wage practices for registered nurses on hospitals' average lengths of stay. *Advances in Health Care Management, 3,* 45–57.

Canadian Institute for Health Information. (2001a). *Discharge abstract data: 2001.* [Data file.] Ottawa: Author.

Canadian Institute for Health Information. (2001b). *Hospital report 2001: Acute care.* Ottawa: Author.

Canadian Institute for Health Information. (2001c). *Management information system data: 2001.* [Data file.] Ottawa: Author.

Cho, S. H., Ketefian, S., Barkauskas, V., & Smith, D. G. (2003). The effects of nurse staffing on adverse events, morbidity, mortality, and medical costs. *Nursing Research, 52*(2), 71–79.

Clarke, S. P., & Aiken, L. H. (2003). Failure to rescue. *American Journal of Nursing, 103*(1), 42–47.

Federal/Provincial/Territorial Advisory Committee on Health Delivery and Human Resources. (2005). *A framework for collaborative pan-Canadian health human resources planning.* Ottawa: Health Canada. Retrieved December 9, 2009, from http://www.hc-sc.gc.ca/ahc-asc/alt_formats/ccs-scm/pdf/public-consult/col/hhr-rhs/PanCanHHR_Framework_sept-05_e.pdf.

Hosmer, D., & Lemeshow, S. (1989). *Applied logistic regression.* New York: John Wiley.

Hosmer, D., & Lemeshow, S. (2000). *Applied logistic regression* (2nd ed.). New York: John Wiley.

Lichtig, L. K., Knauf, R. A., & Milholland, D. K. (1999). Some impacts of nursing on acute care hospital outcomes. *Journal of Nursing Administration, 29*(2), 25–33.

Martin, L., Schoeni, R., Freedman V., & Andreski, P. (2007). Feeling better? Trends in general health status. *Journals of Gerontology Series B: Psychological Sciences, 62*(1), S11–S21.

Miilunpalo, S., Vuori, I., Oja, P., Pasanen, M., & Urponen, H. (1997). Self-rated health status as a measure: The predictive value of self-reported health status on the use of physician services and on mortality in the working age population. *Journal of Clinical Epidemiology, 50*(5), 517–528.

Needleman, J., Buerhaus, P., Mattke, S., Stewart, M., & Zelevinsky, K. (2002). Nurse-staffing levels and the quality of care in hospitals. *New England Journal of Medicine, 346*(22), 1715–1722.

O'Brien-Pallas, L., & Tomblin Murphy, G. (2006). Appendix: Example of a conceptual model for HHR planning. In Federal/Provincial/Territorial Advisory Committee on Health Delivery and Human Resources, *A framework for collaborative pan-Canadian health human resources planning* (pp. 29–36). Ottawa: Health Canada.

Pronovost, P. J. (1999). Organizational characteristics of intensive care units related to outcomes of abdominal aortic surgery. *Journal of the American Medical Association, 281*(14), 1310–1317.

Reijneveld, S. A., & Stronks, K. (2001). The validity of self-reported use of health care across socioeconomic strata: A comparison of survey and registration data. *International Journal of Epidemiology, 30,* 1407–1414.

Shamian, J., Hagen, B., Hu, T. W., & Fogarty, T. E. (1994). The relationship between length of stay and required nursing care hours. *Journal of Nursing Administration, 24*(7/8), 52–58.

Sochalski, J. (2001). Nursing's valued resources: Critical issues in economics and nursing care. *Canadian Journal of Nursing Research, 33*(1), 11–18.

Sochalski, J. (2004). Is more better? The relationship between nurse staffing and the quality of nursing care in hospitals. *Medical Care, 42*(2 Suppl), 67–73.

Statistics Canada. (1997). *National Population Health Survey.* Ottawa: Minister of Industry.

Statistics Canada. (2001). *Canadian Community Health Survey, 2000–01.* Ottawa: Minister of Industry.

Tambay, J. L., & Catlin, G. (1995). Sample design of the National Population Health Survey. *Health Reports/Statistics Canada, Canadian Centre for Health Information,* 7(1), 29–38, 31–42.

Unruh, L. (2008). Nurse staffing and patient, nurse, and financial outcomes. *American Journal of Nursing, 108*(1), 62–71, quiz 72.

Vujicic, M. (2003). *The nursing labour market in Canada during a period of restructuring.* Paper presented at 2nd International Conference on Health Economics and Health Management, Kalamata, Greece, May 29–31.

Whitman, G. R., Kim, Y., Davidson, L. J., Wolf, G. A., & Wang, S. L. (2002). The impact of staffing on patient outcomes across specialty units. *Journal of Nursing Administration, 32*(12), 633–639.

Gail Tomblin Murphy, RN, PhD, is Professor, School of Nursing and Community Health and Epidemiology, Faculty of Medicine, and Director, WHO/PAHO Collaborating Centre on Health Workforce Planning and Research, Dalhousie University, Halifax, Nova Scotia, Canada. Stephen Birch, DPhil, MSc, is Professor, Department of Clinical Epidemiology and Biostatistics and Centre for Health Economics and Policy Analysis, McMaster University, Hamilton, Ontario, Canada. Linda O'Brien-Pallas, RN, PhD, is Professor, Lawrence Bloomberg Faculty of Nursing, University of Toronto, Ontario. George Kephart, PhD, is Associate Professor, Community Health and Epidemiology, Faculty of Medicine, Dalhousie University. Adrian MacKenzie, BSc, GDipEd, is Senior Analyst, WHO/PAHO Collaborating Centre on Health Workforce Planning and Research, Dalhousie University.