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Abstract

This study explored consumer preferences related to topics and vehicles of health promotion information in a primary care clinic in Winnipeg, Manitoba. 204 adult patients from one clinic completed a brief survey on these topics. Respondents expressed an interest in receiving information on a wide range of health promotion topics. In terms of preferred sources of health promotion information, 60% preferred to receive information from their own doctor, 50% from a recommended website, and 50% from brochures or booklets. Using multiple channels to assess interest and provide health promotion information may be the most promising approach in the long run. Given the limited time available in consultations with primary care providers, an effective approach may be to combine brief assessment of health status and interest in receiving health promotion information, discussion with a primary care provider, educational information provided in the form of a brochure or recommended websites, and then follow up by the primary care provider. The results of this study are a first step towards improving our understanding of the needs of the general public related to health promotion within primary care.

Keywords: Knowledge translation, health promotion, primary care, consumer preferences

Access to primary health care services is associated with improved health and a more equitable distribution of health care services (Starfield, Shi, & Macinko, 2005). Research suggests that the Canadian primary care system lags behind other higher income countries in terms of quality (Schoen et al., 2009). At the forefront of a recent initiative by the Canadian Institutes of Health Research (CIHR) to improve primary health care in Canada, is knowledge translation (KT) (Menear, Grindrod, Clouston, Norton, & Légaré, 2012).

CIHR describes KT as "the exchange, synthesis and ethically sound application of knowledge, with the goal of improving health, increasing effective services and products, and strengthening the health care system" (Reitmanova, 2009, p. 2; CIHR, 2012). KT occurs within a complex system of interaction between researchers and users. It can occur through the integration of research findings and the exchange of knowledge, both achieved while committing to ethical principles, norms, and social values (CIHR, 2012).

Successful KT requires one to understand and attend to the multidimensional factors that influence decision-making (Curran, Grimshaw, Hayden, & Campbell, 2011). Mcleroy and colleagues (1988), for example, have identified intrapersonal, interpersonal, organizational, community, and public policy level factors that influence public health. In light of this, and in order to target these factors, various stakeholders within the healthcare system are proposing a shift towards a "patient-centred" approach in which patients are seen as autonomous decision makers (Vashdi & Zalmanovitch, 2012). A key feature of this approach is the assessment of consumers' needs (Curran et al; Soroka & Lim, 2003; Vigoda, 2003), particularly within three core dimensions of the healthcare system: primary care, preventive care and health promotion (Marshall, Leatherman, & Mattke, 2004).

With the rising costs of the healthcare system, health promotion is valued as having a key role in the improvement of population health outcomes (Haughton & Stang, 2012; Vashdi & Zalmanovitch, 2012). Health promotion is defined as the action of "helping people to develop personal skills, creating supportive environments, strengthening communities, influencing governments to enact public health policies, and reorienting and improving health services" (Raphael et al., 1999, p. 200). Effective knowledge synthesis, translation and exchange that considers opposite ends of the KT continuum including health policy makers, governments, health practitioners, as well as the increasingly diverse Canadian population, is needed (Pronk, Peek & Goldstein, 2004). Such a healthcare system, inclusive of all stakeholders, is crucial in supporting evidence-informed health promotion (Armstrong, Waters, Crockett, & Keleher, 2007).

Most research exploring KT strategies related to health promotion has focused on the behaviour of health practitioners but neglected the information needs and preferences of the public (e.g., see Davis et al., 2003; Farmer et al., 2008), and health outcomes of patients (e.g., see Bailey et al., 2010; Brinn, Carson, Esterman, Chang, & Smith, 2010; Ebrahim et al., 2011; Stacey et al., 2011). Notwithstanding the valuable component of the assessment of behaviour and health outcomes, the first step towards effective KT is the assessment of consumer needs and preferences. Not only is it important to identify consumer needs in terms of topics of health

information but it is also crucial to bear in mind that information in general ought not to be delivered uniformly, given the diversity of consumers. It is possible that KT strategies that fit with the interests of the general population and which are convenient and easily accessible, such as wireless handheld devices, could be preferred by consumers. The objective of this study is to explore consumer preferences related to the dissemination of evidence-based health promotion information in a primary care setting.

Method

Participants and Procedure

Participants were recruited at the St. James Street Medical Clinic, a primary care clinic in Winnipeg, Manitoba during February and March, 2012. This clinic provides both walk-in services seven days a week during extended hours (for the large number of persons without ready access to a family doctor) as well as scheduled appointments with family physicians. Since patients (and persons who accompany them), may have to wait for extended periods of time for a walk-in appointment, many are receptive to participation in survey research. Participants were recruited by the first author (PR) while they waited for their medical appointment. Persons attending the clinic were invited to participate if they were 18 years of age and older and were able to complete a survey in English. Participants received a $10 gift card for completing the survey. Approximately 30% of individuals approached declined to participate; reasons for decline included lack of interest in participating, feeling too unwell, a reluctance to participate in a research study, or an inadequate understanding of the English language. This study was approved by the University of Manitoba Health Research Ethics Board.

Measures

Participants completed a 57-item survey that took approximately 10 minutes to complete. The survey was adapted from a previous survey used with persons living with a chronic illness by one of this study's authors (Bernstein et al., 2010) and included questions on demographics (e.g., age, ethnicity, level of education) and health status (e.g., perceived level of health, weight and height). The focus of the survey was on types and sources of health promotion-related information, in addition to preferred methods of receiving health promotion information and perceived frequency of receiving such information from various sources (e.g., Internet, pamphlets from doctor's office). For instance, participants were asked to *"Please indicate how interested you would be in receiving information at your doctor's office about the following healthy lifestyle topics".* Some topics included healthy eating, stress management, and improving friendships and social life and were rated on a 9-point rating scale (0 = *not interested at all*; 8 = *very interested)*. As a second example, participants were asked to *"Please indicate how you would prefer to receive information about health"*. They rated dissemination methods ranging from written information to discussion with a doctor on a 9-point scale (0 = *not preferred at all*; 8 = *very much preferred*).

Results

Demographic and health characteristics. Table 1 describes the demographic and health characteristics of the participants. 204 individuals participated in the study, with ages ranging from 18-88 years (M= 40.5; SD= 15.84) and a mean of 14 years of education. Males and females were fairly equally represented in the sample (41% versus 59 %). The majority of participants were Canadian-born (80 %), of which 19% were Aboriginal. In regards to measures of self-reported health, 65% of participants rated their health as good or excellent and 22% of participants reported that they smoked daily. 43% of participants reported weight and height reflective of a Body Mass Index in the normal range.

Table 1. Demographic Characteristics of Participants

	Total (n= 204)
Male/ Female	40.7%/ 59.3%
Mean Age (SD)	40.5 (15.84)
Children Living in Home (Yes/No)	37.7%/60.3%
If yes, mean number of children (SD)	2.2 (2.1)
Born in Canada (Yes/ No)	80.4%/ 18.1%
If No, Mean number of years in Canada (SD)	16.0 (14.0)
United States	0%
Mexico	0%
South/ Central America or the Caribbean	2.9%
Europe	2.0%
Africa	0.5%
Asia	11.8%
Cultural Background	
White/Caucasian	74.4%
Black	2.5%
Asian	19.2%
Aboriginal	18.7%
Hispanic/Latino	2.9%
Other	10.5%
Prefer not to answer	0.5%
Mean years of education (SD)	14.35 (3.46)
11 years or less	14.2%
12 years	14.7%
13 or 14 years	27.9%
15+ years	40.7%

Table 2. Health Characteristics of Participants

Total (n= 204)	
Reason for Visit	
Accompanying family or friend	24.5%
Regular check-up	6.9%
Injury	13.2%
Sickness	33.3%
Chronic disease management	2%
Other	19.1%
Frequency of Visits to Clinic	
Less than once a year	36.8%
Less than once in six months	27.5%
Less than once in three months	21.6%
Less than once a month	12.3%
Self-Reported Health	
Very poor	2%
Poor	4.4%
Fair	27.5%
Good	45.1%
Excellent	20.1%
Smoke (Yes/No)	21.6%/78%
Self-Perception of Weight	
Underweight	1.5%
a little underweight	5.4%
about the right weight	46.1%
a little overweight	37.3%
overweight	9.8%
Body Mass Index Mean (SD)	**27.31 (6.76)**
under 18.5: underweight	2%
18.5-25: Normal	42.6%
25- 30: overweight	22.5%
30+: obese	27.9%

Communication with health care provider. In regards to communication with their "doctor or health-care provider", 51% of participants agreed with the statement: *"Gives me educational material that fits with my interests and my preferred way of learning"*, and 67% of participants agreed with the statement: *"Encourages or motivates me to improve my health behaviour."* Moreover, *80*% of participants said they would be moderately to very interested in completing a short questionnaire about healthy lifestyle and discussing this questionnaire with their health care provider.

Preferred health topics and informational sources. Respondents were asked to indicate how interested they would be in receiving information at their doctor's office about a number of healthy lifestyle topics (Table 3). A high proportion of respondents (40 to 50%) indicated that they would be very interested in information about healthy eating, healthy sleeping, vitamin supplements, stress management, weight management, and healthy physical activity. Level of interest in other topics was lower, although this may have been related to the different life circumstances of respondents. So a nonsmoker might be less interested in smoking related information than a smoker. For daily smokers, 52% reported being very interested in receiving quitting smoking information as compared to 21% when considering the sample as a whole. For parents with children living with them, 47% reported being very interested in information about healthy eating and physical activity for children and 43% were very interested in information related to dealing with parenting challenges, as compared to 27% and 27% of the sample as a whole, respectively.

Table 3. Ratings of Interest in Receiving Information at Doctor's Office on Healthy Lifestyle Topics

Topic	Rated as Very Interested	Rated as Not Interested	Mean Rating (95% Confidence Interval)
Healthy eating	50.4%	11.3%	6.48 (6.12-6.84)
Healthy sleeping	43.1%	16.7%	6.03 (5.64-6.43)
Information about vitamin supplements	41.2%	22.6%	5.66 (5.24-6.07)
Stress management	40.7%	23.1%	5.69 (5.27-6.12)
Losing weight/maintaining healthy weight	40.2%	23.5%	5.62 (5.21-6.04)
Healthy physical activity or exercise	39.7%	18.2%	5.77 (5.39-6.15)
Info for parents about healthy eating/physical activity for children	31.3%	36.8%	4.72 (4.26-5.18)
Dealing with challenging relationships in the family	26.9%	35.3%	4.62 (4.19-5.05)
Dealing with parenting challenges	26.5%	46.1%	4.10 (3.65-4.55)
Improving my friendships and social life	22.6%	42.7%	4.16 (3.72-4.59)
Quitting smoking	20.6%	56.9%	3.34 (2.87-3.81)
Safer sex	16.7%	50.0%	3.59 (3.18-4.00)
Reducing alcohol or drug use	13.3%	62.2%	2.87 (2.47-3.26)

Note. Each source of information was rated on a on a 9-point rating scale with the anchors 0-2 (not interested at all), 3-5 (moderately interested) and 6-8 (very interested).

The majority of participants reported having access to technological devices and services. Specifically, 92% of respondents had access to television, 90% access to the Internet, 78% the ability to print information from the Internet, and 53% access to a smartphone. As Table 4 indicates, people seem to be receptive to information concerning health in a variety of formats including discussion with a family doctor, websites recommended by a health care provider and brochures or booklets. The proportion indicating an interest in receiving information with new technology

such as smartphones was smaller (28%) but when we consider that only 53% had access to this technology this suggests a significant interest in this as a method of information transfer.

Table 4. Preferences for Source of Health Information

	Rated As Very Much Preferred	*Rated As Not Preferred At All*	Mean Rating (95% Confidence Interval)
Discussion with your doctor	59.8%	6.9%	5.80 (5.51-6.09)
A website recommended by your health care provider	50.1%	23.1%	4.93 (4.54-5.31)
Brochure or booklet	50%	13.3%	5.33 (5-5.67)
Discussion with another health care provider	44.1%	13.7%	4.97 (4.65-5.29)
Smartphone application recommended by your doctor	27.9%	46.6%	3.28 (2.85-3.71)
Computer kiosk in your doctor's waiting room	23%	47%	3.13 (2.74-3.52)

Note. Each source of information was rated on a on a 9-point rating scale with the anchors 0-2 (not preferred at all), 3-5 (moderately preferred) and 6-8 (very much preferred).

Participants were also asked how often they had received information from a variety of sources that had influenced their eating, physical activity, and other health habits (Table 5). The Internet (58%) and television (44%) were rated as the most frequent sources of information, followed by magazines and previous education. Pamphlets from their doctor's office was described as a lower frequency source of health information that influenced health habits (25% quite or very often). Note that this rating of frequency does not give an indication of the relative degree of behavioral influence for information from various sources.

Influence of health information. In describing the level of influence of health-related information on their health behaviour, 39% of participants said that they make active efforts to try to improve their health habits and share health information with others. In contrast, 16% of participants said receiving health related information does not have any influence on their health habits. In addition, 75% of participants said they felt capable of changing their health habits after receiving health information. Finally, 43% of participants agreed with the statement *"When I gain understanding about health-related topics I feel more in control of my health."*

Table 5. Frequency of Receiving Information from Different Sources That Has Influenced Eating, Physical Activity, and Other Health Habits

	Rated As Quite Often or Very Often	Rated As Never or Rarely	Mean Rating (95% Confidence Interval)
Information from the Internet	58.4%	17.7%	3.58 (3.40-3.75)
Television	44.1%	20.1%	3.31 (3.15-3.46)
Magazines	32.4%	25.5%	3.06 (2.90-3.21)
Health information in your education	30.8%	40.2%	2.83 (2.65-3.02)
Pamphlets from your doctor's office	25.4%	33.3%	2.86 (2.71-3.02)
Radio	21.5%	46.6%	2.60 (2.43-2.77)
Newspapers	16.7%	39.7%	2.66 (2.51 – 2.82)
Posters in the community	12.7%	54.4%	2.41 (2.26-2.55)

Note. Each source of information was rated on a on a 5-point rating scale with the anchors 1-2 (never or rarely), 3, (occasionally), 4-5 (quite often or very often).

Discussion

The aim of the current study was to explore consumer preferences related to the dissemination of evidence-based health promotion information in a primary care setting. This study contributes to the current literature on KT by assessing consumer interest in health promotion information as well as preferred vehicles for KT. As previously mentioned, the assessment of needs is the first step toward closing the gap between research and action (Curran et al., 2011).

According to Bernstein and colleagues (2010), the process of developing educational materials for patients includes exploring health information topics that patients are most interested in receiving. Further, previous research suggests that the influence of different media channels varies significantly (Schooler, Chaffee, Flora, & Roser, 1998). Cunningham et al. (in press), particularly, emphasize the importance of using multiple channels of communication when delivering information to consumers, as different segments in the population prefer different information vehicles and types of

information. Thus, the results of this study expand current knowledge related to consumer preferences for both health-related topics of information as well as for vehicles of health-related information that can be used to develop relevant patient educational materials within primary care and related settings.

It is worthwhile to note findings related to preferred health-promotion topics. This study showed that the majority of participants were interested in topics related to physical activity and healthy eating, not only directed to their own health but also targeted to their children. Based on the number of respondents who reported weight and height reflective of overweight and obese levels of Body Mass Index (23% and 28%, respectively), it is clear that KT strategies for health promotion interventions focused on healthy eating and physical activity are relevant. According to various researchers, primary prevention of overweight is important when targeting youth as well as adults (Fransen, Koster, & Molleman, 2012). A core part of primary prevention is the use of educational interventions, along with other important measures. Previous studies have focused on investigating practice-based interventions through interviews with health practitioners (Fransen et al., 2012), and the present study expands this area of research by increasing knowledge of consumer interests related to educational interventions.

Approximately half of those participants who are parents with children in the same home are interested in receiving information related to managing parenting challenges. Previous research indicates that it is critical to include a component on parenting strategies when intervening with children's behavior problems (Biglan, 1995). More recent research also focuses on translating what is known about effective parenting strategies into action and tailoring parenting intervention programs to meet consumer preferences (e.g., see Metzler, Sanders, Rusby, & Crowley, 2012).

Findings from the current study support the importance of patient-health provider communication, as participants rated discussion with their doctor as the preferred method for receiving health-related information. Such preference has been shown to be consistent across studies on health information (Bernstein et al., 2010), even with the increased accessibility to other sources of information. Furthermore, almost half of participants indicated their interest on completing a short questionnaire to discuss with their family doctor. These results support the importance of communication between patients and health care providers as a key KT vehicle for patients. Given the limited time available in consultations with primary care providers, an effective approach may be to combine brief assessment of health status, discussion with a primary care provider, educational information provided in the form of a brochure or recommended websites, and then follow up by the primary care provider (Bernstein et al., 2010).

The relatively high reported level of influence of media sources such as the Internet, television programs and magazines on patient health behavior may be cause of concern. Media sources do not consistently provide reliable information to consumers. However, health promotion programs can take advantage of the media as a KT tool by developing informational programs such as interactive websites that present evidence-based health information to consumers.

This study has a number of limitations. One possible limitation is the exploratory nature of this study which did not assess effectiveness of KT vehicles on behavioural outcomes. Future research could focus on measuring the effectiveness of KT vehicles based on consumer preferences found in this or other studies. Another limitation pertains to the method of investigation. Self-report measures are susceptible to measurement error due to such factors as the social desirability bias. Nonetheless, the principal investigator attempted to limit the influence of this bias by leaving the waiting room and assuring participants of confidentiality and anonymity for their responses. Since this was a walk-in clinic setting, many of the participants did not have an ongoing relationship with the primary care physician they would be seeing.

In contrast, the strengths of this study include an adequate sample size, a high participation rate, and the diversity of the sample. In particular, the sample is reasonably representative of the Winnipeg population with a broad age range, good representation across educational levels, almost 19% being of aboriginal descent, and 18% not born in Canada.

In summary, patients seen in a combined primary care and walk-in clinic show interest in receiving information on health-promotion topics such as healthy eating, healthy sleeping, stress management, and physical activity. Technological devices such as smartphones and recommended websites are potential KT vehicles for health promotion. As demographic characteristics and access to technology in Canada changes, research on KT strategies of health promotion can help identify KT vehicles that target a range of audiences in the general population.

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