Midlife Women, Food Choice, and Bone Health:

A Qualitative Case Study of Using a Participatory Practice Approach to Develop Targeted Nutrition Education Resources

by

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Abstract

Nutrition professionals rely on nutrition education resources to help people make informed food choices. Despite this reliance, nutrition education resources are often developed in isolation of the intended users, a practice that may compromise the effectiveness of dietary services provided by nutrition professionals. Diet is a modifiable factor impacting bone health. Concurrent with midlife Canadian women's less than recommended dietary intake of foods rich in calcium and vitamin D—two key nutrients for bone health—is a projected increased incidence of osteoporosis as Canada's population ages. Providing dietary services that match midlife Canadian women's needs may be effectual in maximizing dietary approaches to bone health.

The objectives of this two-phase qualitative research were, first, to gain insight into how midlife women consider bone health in their food choices, and second, to use an inclusive and collaborative process engaging nutrition professionals and lay midlife women in producing bone health-related nutrition education resources that meet their needs.

Using focus groups and qualitative data analysis strategies consistent with focus group methodology, the first phase revealed multiple realities for healthy midlife women; despite this, they shared an idealized view of wanting to eat for "*holistic*" health. Most do not want to explicitly prioritize bone health relative to other aspects of health; however, few women felt their usual eating patterns matched the prevailing idealized view.

In the second phase, a collaborative partnership of midlife community women and dietitians used a participatory practice approach to develop two nutrition education resources: a bookmark style print resource and a website combining women's personal stories with information on food choices, physical activity, and nutritional supplements. Qualitative interviews conducted at the conclusion of the project revealed varied ways in which the participants valued and used the final resources in their personal and professional lives. A reflective examination of the benefits obtained from, and challenges encountered in, this project suggests that nutrition professionals' practice of developing nutrition education

resources may benefit from engaging in inclusive and collaborative activities with the intended

users of their nutrition services.

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Statement of Co-Authorship

In this statement, I certify that as author of this dissertation and lead author on stand-alone manuscripts for chapters 2, 3, and 4, I was the major contributor to all aspects of this research. My academic supervisor Dr. Gwen Chapman, and committee members Drs. Susan Barr and Irving Rootman, guided the research through to completion. I secured funding for the two phases of research included in this dissertation from the Canadian Foundation for Dietetic Research (Principal Investigator: Dr. Gwen Chapman; Co-applicants: Dr. Susan Barr, Gail Hammond) and doctoral fellowship funding from the Social Sciences and Humanities Research Council.

For the research presented in chapter 2, I developed the research design, research questions, completed all aspects of participant recruitment, and was responsible for collecting the data, analyzing the data, disseminating the findings, and writing the manuscript. Dr. Gwen Chapman provided overall guidance on the study design, interpretation of the findings, and editorial content to revisions of the manuscript; Dr. Susan Barr provided academic advice on the study design and revisions to the manuscript; and Dr. Irving Rootman provided academic counsel on the study design. The manuscript has been accepted for publication in the Journal of Human Nutrition and Dietetics.

For the research described in chapters 3 and 4, I designed the research protocol, developed the research questions, recruited participants, collected data, and interpreted the data with the goal of writing manuscripts for submission to peer-reviewed journals. I will be the lead author on these manuscripts with Dr. Gwen Chapman as the primary co-author. Other committee members may become authors of these manuscripts as appropriate to their contributions.

Chapter 1

Introduction and Literature Review

INTRODUCTION

In Canada, registered dietitians and nutritionists are the most trusted source of accurate and reliable information on food and nutrition (Dietitians of Canada, 2010). The practice specialty area of nutrition education resource development is important for generating quality communication tools that assist dietitians (clinical setting) and nutritionists (community setting) in helping people make informed food choices to meet their particular nutrition needs. Currently, as in the past, Canadians' intake of certain foods and nutrients from foods or supplements has fallen short of meeting recommended intakes: of particular relevance to the research reported here is evidence for women consuming diets inadequate in calcium and vitamin D, two key nutrients for bone health (Poliquin, Joseph, & Gray-Donald, 2009). Furthermore, statistics indicate one in four women over 50 years of age is living with osteoporosis—a condition of low bone density that increases risk of fracture—and the prevalence of osteoporosis is expected to rise sharply as the lead cohort of baby boomers enters their senior years in 2011 (Brown & Fortier, 2006). The concurrence of these effects calls for a closer look at the development processes used to produce nutrition education resources targeted to women and bone health. This dissertation describes a two-phase qualitative case study exploring the use of a participatory approach to developing nutrition education resources that more fully incorporate intended users' perspectives. The first phase used focus groups to explore the context of women's food choices for bone health, and the second phase used a participatory research-informed approach—described as participatory practice—for developing nutrition education resources that were aimed at helping midlife women maximize their bone health.

The aging of Canada's population is accelerating as the proportion of seniors increases and Canadians—women moreso than men—live longer lives (Statistics Canada, 2005). Along with this demographic shift, North American cultures are experiencing a societal expectation for people to engage in socially valued health behaviours (Cheek, 2008; Smith-DiJulio, Windsor, & Anderson, 2010). Set against the backdrop of increased government spending on health care and a growing public interest in healthy eating and living well into old age, an increasing demand for professional nutrition services is expected into the foreseeable future (Service Canada, 2008; U.S. Bureau of Labor Statistics, 2009). It is important that evidence-based practice aim to provide health care services that match health care users' needs (Brownson, Fielding, & Maylahn, 2009). An investigation that explores factors influencing people's food choices and uses a collaborative process for incorporating the contextual understanding of food choices into developing nutrition education resources may provide evidence that nutrition practitioners can use to optimize a match between their nutrition services and the demographic profile, interests, and needs of Canadians (Hill, Alpi, & Auerbach, 2010). The participation of key stakeholders who can benefit from this type of investigation is crucial for developing credible, evidence-based nutrition education resources. In this chapter I will first introduce the conceptual value of conducting a social type of inquiry and follow that with a literature review that situates the introduced concepts in current bodies of literature and highlights a need for investigating ways to develop targeted nutrition education resources that aim to help midlife women maximize their bone health.

Framing a Need for Understanding the Context of Midlife Women, Food Choice, and Bone Health

Dietitians of Canada (DC) and the American Dietetic Association (ADA) acknowledge the unique needs of women in both their original joint position paper on women's health and nutrition (American Dietetic Association & Dietitians of Canada, 1999) and an updated version of the paper (American Dietetic Association & Dietitians of Canada, 2004). Emphasis is placed on understanding *how* the larger context of women's economic, social, cultural, and personal lives influences everyday food decisions. An additional priority is shifting the role of dietetic professionals away from primarily providing dietary guidance to practicing in a more

encompassing manner: more specifically, nutrition professionals are encouraged to expand their understanding of the interrelationships between nutrition and women's health, engage in nutrition-based research, and advocate for change that contributes to women's nutritional well-being at the policy level of influence (ADA & DC, 2004).

One way for nutrition educators to increase their working knowledge of women's health issues is to engage in greater collaboration with users of their health care services: too often the voices and expertise of the users is largely unaccounted for in practice-based activities (Leathem et al., 2009; Gal & Prigat, 2005). The literature offers few examples of obtaining substantive input from users during resource development processes. Recently, Eyles et al. (2009) used focus groups to capture people's thoughts on the content of print-based nutrition education resources designed for a multi-ethnic population. In drawing their conclusions, the authors recommended incorporating the voices of the intended users from the point of conception of the resources in order to increase acceptability of the final resources. Strolla, Gans, & Risica (2006) used a complementary, mixed methods design for formative research to capture the voices of Hispanic and non-Hispanic adults in the development of a tailored nutrition education resource. These authors also noted the value of incorporating the voices of intended users throughout the development phases of resource development. Research that accounts for the voices of intended users throughout a process may elucidate evidence for effective strategies, processes, or models nutritionists can use to help women improve their nutritional health.

What we have learned from diet-related models and frameworks is that food decisions are situational and dynamic in nature and influenced by individual, interpersonal, and broader environmental factors. Examples of these models and frameworks include: the Food Choice Model (Figure 1.1), a structure for examining how adults develop personal food choice systems (Furst, Connors, Bisogni, Sobal, & Falk, 1996); the Integrative Framework for Research in Diet and Communication (Figure 1.2), a socioecological perspective of how dietary communication can intersect at various levels of influence to effect dietary behaviour change (National Cancer Institute, 2008); and a socioecological model that Contento (2007) has used to illustrate how nutrition education can intersect at different levels of influence (Figure 1.3).
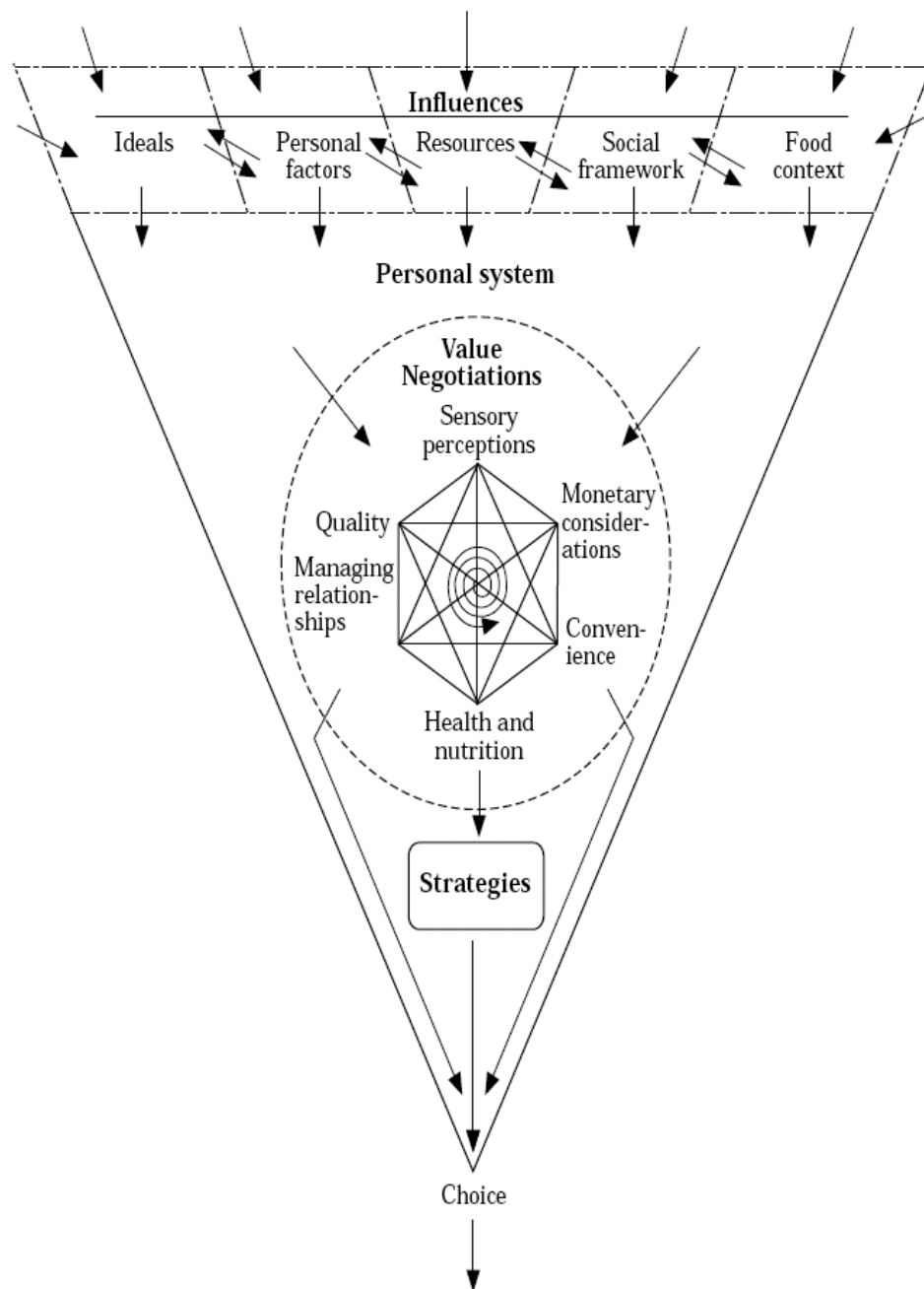
Figure 1.1. Food Choice: A Conceptual Model of the Process (Furst et al., 1996)
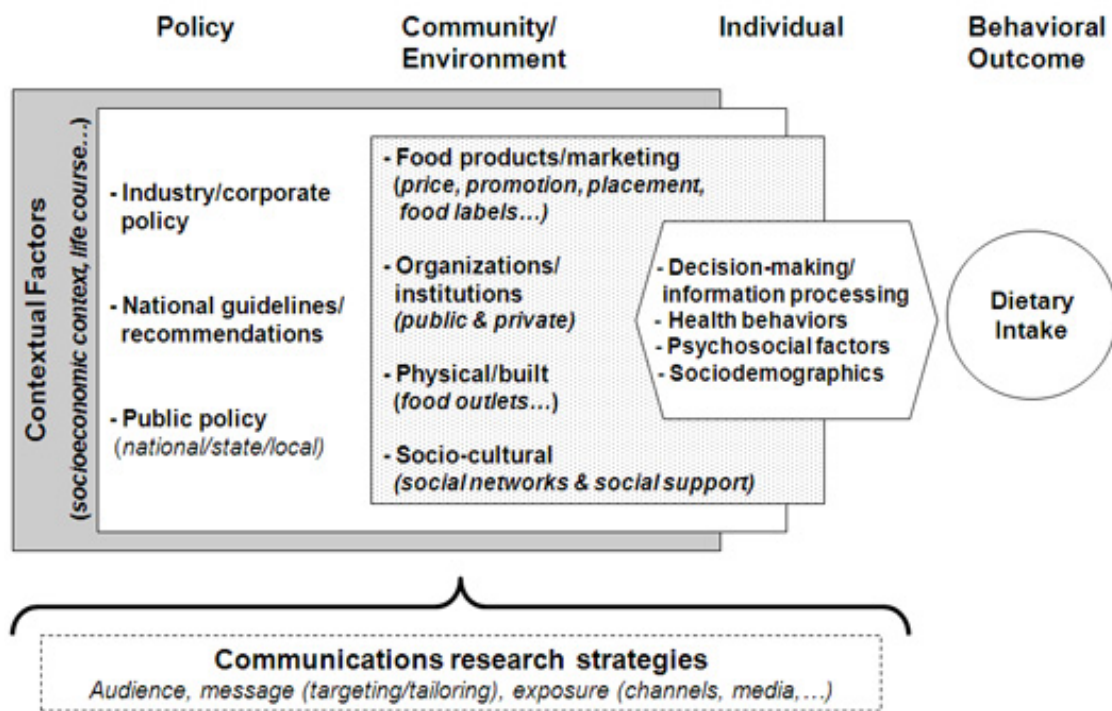
Figure 1.2. Integrative Framework for Research in Diet and Communication (National Cancer Institute, 2008)

Individual level
- Food preferences and enjoyment
- Beliefs, attitudes, values
- Knowledge
- Life experience

Interpersonal level
- Family, peers, friends, health professionals
- Social roles
- Social and cultural norms
- Social networks

Institutional/ organizational level
- Workplaces, schools, organizations
- Rules, policies, informal structures

Community level
- Neighborhoods
- Social networks
- Norms

Policy and systems
- Policy
- Social structure
- Systems
- Local, state, federal
- Media

Nutrition Education

Figure 1.3. Socioecological Model: Levels of Intervention for Nutrition Education (Contento, 2007)

Yet, when we direct our attention to women in midlife there is a gap in current knowledge of *how* women consider bone health in their food choices. Ways to investigate this gap and ways to meet women's dietary education needs in this area may be approached using the concept of a polytheoretical model, wherein constructs from multiple models and frameworks are used in an organized and intersecting way rather than relying solely on a single frame of reference. For example, the phenomenon of women increasingly turning to the Internet for health information that they often perceive as conflicting and of variable credibility (Hu & Sundar, 2010; Rahmqvist & Bara, 2007) draws our attention to broader mediating effects (e.g., convenience (24/7), access to diverse information, anonymity) on women's health behaviours, which may be unaccounted for in any one model or framework. As such, an examination of broader mediating effects may require use of constructs from communication models, message theories, and behavioural theories to determine why women repeatedly turn to finding dubious sources of health information on the Internet. As complex as it may be to make theoretical determinations of why women repeatedly use the Internet to seek health and nutrition information, the impact of broader determinants on food choice is likely just as complex.

Recent interest in understanding the broader determinants of health (Raphael, 2004) has been reflected in a proliferation of studies including some in the area of nutrition. In 2005, a supplemental issue of the Canadian Journal of Public Health, *Understanding the Forces That Influence Our Eating Habits: What We Know and Need to Know,* reviewed the current state of knowledge regarding social determinants of healthy eating and identified specific knowledge and research gaps in this field. In a synthesis of this topic, Raine (2005) acknowledged the highly contextual nature of eating behaviours, and noted a need for improving our understanding of the context of eating, a notion that is backed by the ADA-DC priority for nutrition professionals to gain a better understanding of how women make food decisions. Certainly, the impact of other determinants on health such as literacy (Ronson & Rootman, 2004) and social policy (Raphael & Curry-Stevens, 2004) also supports the call for a better understanding of the context in which food decisions are made.

Although investigations into the broader determinants of health has been a relatively recent, albeit active, field of research and a great deal has been learned about women's health over the past 20 years, there is much more to learn about how nutrition is situated in the daily lives of women (ADA & DC, 1999, 2004). The value of an improved understanding of midlife women's nutrition education needs may lead to developing resources that motivate desirable dietary behaviour outcomes.

A Call for Developing Targeted Nutrition Education Resources

Research has indicated varying degrees of success with the implementation of nutrition education programs (Contento, 2007). Bringing salient and meaningful dietary messages and strategies to people's awareness is critical to the success of any educational program for it is through people's *interpretation* of the information they receive that they will decide to, or not to, act (Contento, 2007). In addition, the literature suggests an engaged, collaborative approach among nutritionists and users of their nutrition services can generate credible nutrition messages that hold meaning for the users (Lantz, Viruell-Fuentes, Israel, Softley, & Guzman, 2001). The point of people interpreting information raises a critical question when developing nutrition education resources: Who knows best as to the usefulness of the information provided?

For some time now, the creation of knowledge has been accepted as a social process (McQuiston, Parrado, Olmos-Muniz, & Martinez, 2005; Palmer, 1987). When the standard practice of resource development that lies squarely in the hands of nutrition professionals is adapted to a more inclusive process by engaging others affected by a nutrition issue, Horowitz, Robinson, and Seifer (2009) have suggested there is an increased likelihood of developing meaningful and effective nutrition education materials. In terms of achieving behaviour outcomes, Achterberg and Miller (2004) contend that better progress might be made in nutrition behaviour research and behaviour change if nutrition educators join together in a *community* [original emphasis] rather than working in isolation. Assuming that Achterberg and Miller's idea of community comprises professional colleagues, their contention may be extended to include others who are affected by a nutrition issue, for it is

these people who will determine the usefulness of the information in making their decision to, or not to, act. Partnering people with diverse backgrounds and a variety of perspectives on a nutrition issue in critical and enduring dialogue—such as through social forms of inquiry that share governance and decision-making and foster a sense of community—can create a socially constructed, tailored, and relational knowledge (Borgatti & Cross, 2003; Lincoln, 1995). Israel, Schulz, Parker, & Becker (1998) point to the value of participatory research (PR) in blending 'professional' and 'lay' knowledge to improve the understanding of factors that have led to current (e.g., dietary) behaviours and to generate meaningful ways to address the issues. Investigating collaborative approaches between lay people and professionals can lead to understanding how midlife women consider bone health in their food choice systems and have the potential to benefit both personal and professional competence goals of the participants. To this end, the second phase of my dissertation research explored the feasibility of applying a participatory practice (PP) approach—an approach that has roots in PR—to a process used by midlife lay and professional women to develop education resources for bone health that they would value and use.

When the above issues are taken together, a critical examination of the intersecting factors of food choice, women's health, and dietary communications is warranted. The development and design of nutrition education resources through a collaborative process may contribute to advances in understanding how to bring Canadian women's dietary intakes closer to current recommendations that specifically support bone health.

Up to this point, I have provided conceptual support for the research that is presented in this dissertation. In the remainder of chapter 1, I summarize key literature that more specifically: (1) identifies gaps in, and a need for, understanding the context in which midlife women consider bone health in their food choice systems; and, (2) supports exploring the process of using a participatory practice approach to develop nutrition education resources aimed at helping midlife women make bone health-promoting choices. I have drawn chapter 1 to a close by presenting the research purpose and research questions of the case study presented in this dissertation.

LITERATURE REVIEW

In this review of the literature, I have included pertinent background information that: provides context to the topic of midlife women, food choice, and bone health; has informed my theoretical and conceptual approaches to, and understandings taken from, the dissertation research; and, more specifically provides arguments for nutrition professionals to consider using a more inclusive, collaborative process for resource development in their practices. In writing the literature review, I relied on literature from divergent fields ranging from epidemiology, qualitative research approaches, collaborative research inquiries, and communication theory to nutrition education, food choice, and women's health. The need to be informed by a broad landscape of research areas underscores the complexity of addressing nutrition education for women's bone health in the practice area of resource development. A brief summary follows the review.

Background Trends

National Trends: Demographics

The Canadian population is getting older (Statistics Canada, 2008), and beginning in 2011, aging of the elderly (65+ years) will accelerate when the first cohort of baby boomers turns 65 years. Statistical projections indicate around 2015 the elderly will outnumber children, an unprecedented event in Canada's history (Statistics Canada, 2005). The median age of Canada's population is projected to climb from where it was in 2005 at 39 years to between 43 and 46 years in 2031 and between 45 and 50 years in 2056 (Statistics Canada, 2005). In the next 20 years, the elderly proportion of the Canadian population is projected to almost double from 13% in 2005 to approximately 24% in 2031 (Statistics Canada, 2005). One implication of these statistics is the growing need for services supporting the public's interest in healthy eating and healthy aging. Taking a closer look at past and present nutrition trends may illuminate ways to advance nutrition education efforts that support healthy aging for Canadians. Of particular importance to the research described in this dissertation is supporting healthy aging in midlife women.

National Trends: Diets

National public health policy has provided quantitative dietary guidance to Canadian consumers since 1942 (Health Canada, 2010) and continues today in the form of *Eating Well with Canada's Food Guide*. Past quantitative data have determined a gap between Canadian women's dietary practices and national nutrition guidelines (Gray-Donald, Jacobs-Starkey, & Johnson-Down, 2000; Jacobs Starkey, Johnson-Down, & Gray-Donald, 2001; Statistics Canada, 2007). Canadian women's insufficient consumption of foods rich in calcium and vitamin D— two key nutrients important to bone health—may be contributing to an increased risk for bone loss and fracture later in life (Statistics Canada, 2007). Milk and milk products are substantial sources of these nutrients in the Canadian diet (Poliquin et al., 2009).

Starkey et al. (2001) reported Canadian women consumed a daily average of 1.5 servings of Milk Products, falling short of the two to four servings recommended at that time in *Canada's Food Guide to Healthy Eating*. More specific to midlife women, British Columbia data from 1999 indicated approximately 87% of 35 to 49 year-old women consumed less than the minimum recommended two servings per day of Milk Products, and these foods accounted for a majority (57%) of total calcium intake (Forster-Coull, Barr, & Levy-Milne, 2004). Gulliver & Horwath (2001) found women perceived their consumption of milk and milk products was of benefit to their future health, particularly bone health; however, these foods were also perceived to contribute to adverse health effects—such as being sources of cholesterol and calories that could lead to unwanted weight gain—potentially limiting the consumption of these foods in reaching current recommended intake levels.

In 2004, the daily average calcium intake from foods alone was 827 mg and 750 mg for Canadian and British Columbia women (age 31 to 50 years), respectively, both well below the Adequate Intake of 1000 mg/day recommended for women between 19 to 50 years of age (Institute of Medicine, 1997; Statistics Canada, 2007). When accounting for supplement use, the average daily calcium intakes reported for Canadian and British Columbia women (31 to 50 years) were 982 mg and 873 mg, respectively, still below the Adequate Intake (Forster-Coull, et al., 2004; Vatanparast, Dolega-Cieszkowski, & Whiting, 2009). As age increases above

50 years, the Adequate Intake also increases to 1200 mg/day[1] (Institute of Medicine, 1997). Canadian women in midlife did not fare any better than younger women: those aged 51 to 70 years consumed a daily average of 729 mg of calcium from foods alone and 1057 mg from food and supplements combined (Vatanparast et al., 2009). Just as Gulliver and Horwath (2001) found, these low intakes do not appear to be entirely related to a lack of nutrition knowledge since Canadian women consider milk to be a food that has health-promoting properties; despite this, 86% consider calcium a nutrient of concern in their diets (National Institute of Nutrition, 2000; National Institute of Nutrition, 2002).

In 2004, the daily average vitamin D intake from foods alone was 5.2 μg and 4.7 μg for Canadian and British Columbia women (age 31 to 50 years), respectively. While on a national basis, Canadian women's diets slightly exceeded the Adequate Intake of 5 μg vitamin D per day for women between 19 to 50 years of age (Institute of Medicine, 1997; Statistics Canada, 2007), British Columbia women's dietary intake of vitamin D fell short of the recommendation. Currently, no published data exist for vitamin D supplement use in Canada. As age increases from 51 to 70 years, the Adequate Intake for adults increases to 10 μg vitamin D/day (Institute of Medicine, 1997), and for women aged 71 years or older the Adequate Intake increases to 15 μg/day. Similar to calcium intakes, Canadian midlife women did not fare better in their vitamin D intakes than younger women: those aged 51 to 70 years consumed a daily vitamin D average of 5.0 μg from foods alone, however, Canadian women aged 71 years and older consumed a daily average of 5.3 μg of vitamin D from foods. The above quantitative data support the notion that multiple factors impact on Canadian women's dietary habits in regard to supporting bone health.

Recent attention has been given to understanding factors that account for the gap between women's dietary practices and guidelines for bone health. Taste, health, cost, and family considerations have been identified as four key factors determining women's milk and milk alternative selections at the grocery store (Hammond & Chapman, 2008). Even though purchase strategies have provided some insight into factors influencing women's food choices,

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[1] An Institute of Medicine committee is updating the Adequate Intakes for vitamin D and calcium. Release of the report is due in fall 2010. Adequate Intake values for vitamin D and calcium may change from the current values noted above.

a broader understanding of how bone health fits into women's food choices in the context of their daily lives is required.

National Trends: Bone Health

Our aging population, in conjunction with a continuing rise in prevalence of osteoporosis, places pressures on health professionals to deliver effective health care services. Many of these health care services focus on prevention measures, some that help people retain bone health as far into their senior years as possible (Dorfman & Wallack, 2007; Hogan & Hogan, 2002). With the current estimate of one in every four Canadian women over 50 years of age living with osteoporosis (Brown & Fortier, 2006; Fitt et al., 2001) and an estimated quadrupling of hip fractures by the year 2030 from the current annual estimate of 30,000, the stage is set for increased social and economic burdens that will impact on quality of life issues in Canadians' senior years (Goeree, O'Brien, Pettitt, Cuddy, Ferraz, & Adachi, 1996; Jackson, Tenenhouse, Robertson, & the CaMos Study Group, 2000; Papadimitropoulos, Coyte, Josse, & Greenwood, 1997).

Just as multiple factors impact on food choice, the same holds true for bone health. A number of factors including healthy eating, physical activity, genetics, smoking, alcohol use, stress, and medications affect bone health (U.S. Department of Health and Human Services, 2004). Educational efforts that encourage people to make choices beneficial to bone health are key components of prevention services. As health care providers, nutrition educators have a critical role to play in developing and delivering evidence-based, nutrition-related bone health messages in a way that is sensitive to meeting the needs of the users of their health services.

Setting the Stage for Nutrition Education

Given the importance of healthy aging to Canadians (Federal/ Provincial/ Territorial Committee of Officials (Seniors), Healthy Aging and Wellness Working Group, 2006), using a life-course approach to modifying behaviours is most likely the optimal way for people to realize good health through their senior years (Peel, McClure, & Bartlett, 2005); however, it is

never too late to start practicing health-promoting behaviours. The need for a more nuanced contextual understanding of women's health practices at different life stages has been identified, including the importance of understanding women's eating habits (ADA & DC, 2004). As noted previously, the Food Choice Model (Furst et al., 1996) provides a structure for describing ways in which the life course and interrelated factors influence the development of personal food choice systems (Figure 1.1). The explicit consideration of a range of influences (ideals, personal factors, resources, social framework, and food context) and values (managing relationships, sensory perceptions, monetary considerations, convenience, health and nutrition, and quality) points to a complex process for choosing foods. The model suggests people often develop food choice strategies by relying on heuristics as a way to cope with the frequency and complexity of making food choices (Furst et al., 1996). Furthermore, prioritizing different values under different conditions results in food choices that are situationally specific. For example, a woman who has been affected by a person living with osteoporosis may give priority attention to the value of 'health and nutrition' when negotiating among other values found in the model, and may consequently choose to have a caffè latte with her lunch rather than a cup of brewed coffee. On the other hand, a woman who has no family history of osteoporosis may give priority attention to the value of 'monetary considerations' over 'health and nutrition' when choosing foods. While a range of broader influences on food choices may be at the root of, and reinforce, everyday food decisions, the dynamic nature of prioritizing values to determine food choices illustrates an element of complexity in attempting to understand people's overall food choice patterns. Consequently, when a nutrition education resource is targeted to a particular type of client, it may have limited value to clients with similar characteristics due to the dynamic nature of prioritizing among multiple values.

The target level of an intervention such as individuals, groups, organizations, and broader jurisdictional entities including provincial and national governments affects the type of resource to develop and use for a given situation. Using a socioecological model, Contento (2007) has shown how nutrition education interventions (e.g., programs, resources) can be targeted to multiple levels of influence (Figure 1.3). This model shows a broad scope of

possible intervention. Notwithstanding the level of intervention, nutrition education initiatives should create awareness and provide support for people to change their food behaviours that will benefit their quality of life. Similar to the model used by Contento (2007), the Integrative Framework for Research in Diet and Communication (National Cancer Institute, 2008) illustrates communications strategies can span across multiple levels of context to effect dietary behaviours; for example, policy, community/environment, and individual levels of influence (Figure 1.2). It is critical that nutrition education resources fit with the intended level of influence: for example, resources that are designed for impact at the individual level are unlikely to be useful in developing nutrition policies. Similarly, resources that are developed using a participatory practice approach will likely be best suited to the types of people who engage as partners in the development process and not to organizations. Despite the complexities involved in meeting people's nutrition education needs, models and frameworks can be useful for determining interrelationships between factors that intersect with midlife women's food systems for bone health, which can be used to inform processes for producing educational messages that help midlife women with their food choice behaviours.

Despite being a complex task to develop accessible, meaningful, consistent, and reliable education resources, the process of developing resources can present an opportunity for nutritionists and dietitians to gain a better understanding of how nutrition fits into women's lives. Nowadays, most nutritionists are aware of the value in using theory-based, behaviourally-focused nutrition education resources in their daily professional practices (Contento, 2007). Furthermore, it is well accepted that processes used to develop resources must be sensitive to the context of the intended users' lives to generate messages that are targeted to the users' needs and have meaningful application in their lives (Hornik & Kelly, 2007; Wilson, 2007). Given the complexity of developing nutrition education resources and understanding how nutrition fits into women's lives, some theorists have entered into debate on the value of using an integrated polytheoretical model—one in which constructs from multiple theories, models and frameworks are interconnected into an integrated model (Contento, 2010; Institute of Medicine, 2002)—to explain or predict behaviour change. Achterberg and Miller (2004) suggest using an integrated model may hold promise in nutrition

education and behavioural interventions; however, to date, using this type of approach to develop nutrition education resources has been primarily an intellectual exercise. One exception is a study reported by Sorensen and colleagues (1998) for increasing the consumption of fruits and vegetables in the workplace. In this dissertation, it is not my intention to promote using a polytheoretical approach to guide nutrition education resource development processes, rather, I take hope from these types of debates that novel approaches to improving nutrition education efforts may better assist women in making more informed food choices in their lives.

With an existing gap between dietary intakes of women at midlife and dietary recommendations, a current focus on expanding the scope of practice for dietitians and nutritionists, and the importance of providing credible nutrition resources to the general public, investigating the intersection of women's health, dietary communication and nutrition education, and food choice is warranted. Using a novel approach to bring new understanding to food choice strategies, messages, and educational materials fits well with the core values of participatory practice.

Participatory Practice

The core values and principles that frame the notion of participatory practice (PP)—respect, trust, dignity, reciprocity, and cooperation—are shared with other forms of participatory inquiry (Ledwith & Springett, 2010). PP can be viewed as a form of participatory inquiry that is responsive to the types of research questions arising out of practice-based activities. At present, the scant literature on PP closely associates its features with the large body of literature on PR (Ledwith & Springett, 2010). For the purpose of this dissertation, a distinction between PP and PR is viewed through the lens of PP having a closer association with generating knowledge for transforming locally-positioned, practice-based activities rather than effecting community-level change that is characteristically aligned with outcomes from PR (PR is outlined in the following section.) (Israel et al., 1998). Effecting change on small-scale, traditionally expert-driven practice-based activities may be better supported by research that is predominantly designed to emphasize beneficial outcomes to practice rather

than developing theory. Processes that are guided by a mix of practitioners, community members, and researchers who engage in a paradigm of sharing dimensions of power in making decisions and participate in a co-educative process can help to reshape practice-based activities. Transforming the space of practice from expert-driven processes to more encompassing collaborative-driven processes ought to generate new knowledge that benefits all of the partners involved in the process.

Participatory Research

As the essence of PP is rooted in the paradigm of PR, I have drawn heavily from the vast PR literature in proposing the usefulness and applicability of PP to my research on midlife women, food choice, and bone health. In its most general sense, PR is a process that combines research, education, and action (Hall, 1992). PR has been defined in different ways by different authors as:

✦ "A systematic inquiry, with the collaboration of those affected by the issue being studied, for the purposes of education and taking action or effecting change." (Green et al., 1995, p. 4)

✦ "A self-conscious way of empowering people to take effective action toward improving conditions in their lives." (Park, 1993, p. 1)

✦ "[An] attempt to break down the distinction between the researchers and the researched, the subjects and objects of knowledge production by the participation of the people-for-themselves in the process of gaining and creating knowledge. In the process, the research is seen not only as a process of creating knowledge, but simultaneously, as education and development of consciousness, and of mobilization for action." (Gaventa, 1993, p. 34)

PR represents collaboration between community citizens actively engaged as partners with researchers and other stakeholders throughout a research process to solve and effect change to a community-based issue that holds relevance to all of the research partners (Williams, Bray, Shapiro-Mendoza, Reisz, & Peranteau, 2009). PR recognizes the limitations of

traditional "value-free" research and is consciously value-driven, integrating participant subjectivity into all aspects of the research (Israel et al., 1998). It is a process of co-learning and co-creation of knowledge. Given multiple definitions of PR and confusion that often arises over use of the term PR, Minkler (2000) contends we should use PR as a term to describe an overarching conceptual approach to participative inquiry that emphasizes research, education, and action. When viewed in this light, PR may be considered an umbrella term that includes other closely related schools of research such as action research, co-operative inquiry, participatory action research, and participatory practice. While grappling continues on an intellectual level to clearly define PR, it is clear that PR should be distinguished from research that is located in the community and treats the participants as objects of research. PR may be further characterized by heterogenic application to a range of study designs and research methods such as those found in bodies of literature including education, nursing, and community development (Butterfoss, 2006; Cargo & Mercer, 2008). By calling upon community members for diverse perspectives on an issue and using a framework of systematic inquiry, PR and PP promote collegial dialogue, respectful co-education of the partners to resolve the issue, and actions that can benefit individuals, groups, or larger communities.

Purpose and Value of Participatory Research

The purpose of using PR or closely related PR-informed processes like PP in a health promotion context is to improve the health of people by creating conditions that help them take control over various determinants of their health (Cornwall, 1996). Through interactive and iterative participation in the triad of knowledge, research, and action (Gaventa & Cornwall, 2006; Lewin, 1946), PR holds hope for people to empower themselves to be better educated, to be motivated, and to take actions that benefit their health. However, underpinning most collaborative endeavours are issues of power, space, and human agency. These issues do not remain implicit in PR and PP, rather they are explicitly acknowledged and addressed. With an historical emphasis of traditional research being done "on" people rather than "with" people, power has classically resided in the hands of those with knowledge, the

researchers and professionals (Cargo & Mercer, 2008; Wallerstein, 1999; Wallerstein, 2006). Central to the principles of PR and PP are actions that divest the implicit relationship between power and knowledge (Park, 1993): acts of open communication, sharing, learning, and growing with newly gained knowledge, and developing strong relationships that enable partners to take collective and individualized action. This research paradigm aims to break down the conventional separation between the 'researched' and the 'researcher' and legitimize the generation of collective, relational knowledge. In the process of self-empowerment, PR and PP commit to opening communicative space and providing resources for participants to be able to take action to improve their human and social capital (Habermas, 1984).

The value of PR and PP lies in the cooperative, interdependent, and interactive relationships among community members, organizational representatives (e.g., health professionals), and researchers. Building mutual respect and trust takes time, but by sharing 'local' expertise (e.g., social and cultural knowledge and experiences) with professional expertise (e.g., technical knowledge) and research expertise (e.g., academic knowledge), relationships can build that strengthen the process of co-generating new integrated, rather than dichotomized, knowledge. In this collaborative and dynamic process, the centre of knowledge generation shifts from technical and academic expertise to collective and phenomenological expertise to produce an integrated, relational, and tailored type of knowledge specific to the phenomenon under study (Hall, 1992).

The iterative value of reflecting on progress to inform further progress builds strong linkages and solidarity among the partners engaged in solving the issue at hand. In PR, through an "authentic" engagement of the partners (Ferree, Gamson, Gerhards, & Rucht, 2002, p. 314) solutions to problems are identified and enacted rather than simply described. Freire, the noted Brazilian educator, labelled this iterative process of action and reflection 'conscientization', noting the essence of meaningful action comes when there is a critical consciousness of one's own reality, and dialogue (Freire, 1970). Reflection without action does not change reality or solve problems, and meaningful dialogue cannot exist without mutual respect and trust. In PR and PP, space is provided wherein relationships are built,

collaboration occurs, knowledge is created, capacities expand, and actions are taken that are relevant and meaningful to the realities and needs of the participants (Gaventa & Cornwall, 2006).

Key Principles of Participatory Research

Understanding the purpose and value of using a participatory framework for research highlights PR and PP are not conducted in a sequence of formalized steps, rather these approaches to research are guided by key principles that are distinguished from other types of qualitative research (Green et al., 1995; Israel et al., 2001). The literature indicates PR is guided by:

1. identification of the research question or issue at the community level,
2. a high degree of community participation in a dialectic process,
3. participation by community members who have experience with the issue,
4. collaborative and iterative co-education among all participants that strengthens the partnership and recognizes knowledge is socially constructed,
5. generation of collaborative solutions to the problem or issue, and
6. a level of action that is beneficial, realistic, and appropriate to the aim of the project and its people.

By sharing a core philosophy of inclusivity and participants' active engagement in dialogue, PR and PP do hold common values to other types of qualitative research approaches; however, in its emphasis on research with co-education and collective action in democratizing the process of knowledge production, PR and PP stand in a unique position among other qualitative research approaches (Cargo & Mercer, 2008). These guiding principles inform participatory researchers; however, in the real world of conducting PR it is well recognized all principles are often not met (Green et al., 1995).

An Integrative Practice Framework for Participatory Research

A recent contribution to the PR literature is the Integrative Practice Framework for Participatory Research (IPFPR; Figure 1.4). The framework was constructed following an
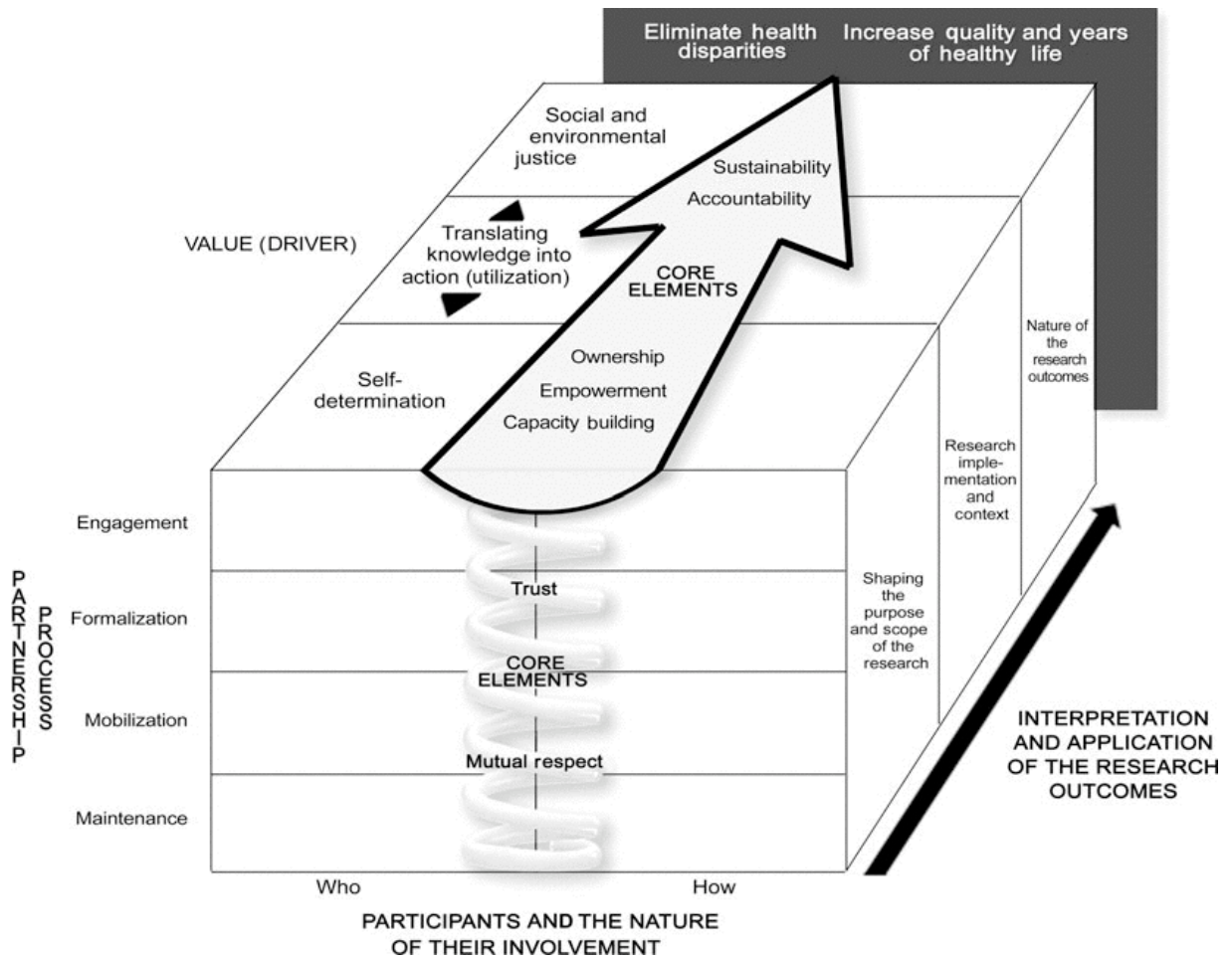
Figure 1.4. Integrative Practice Framework for Participatory Research (Cargo & Mercer, 2008)

extensive review of real-world studies that have integrated a PR approach into their designs (Cargo & Mercer, 2008). The framework is useful for conceptualizing how to operationalize PR principles in descriptive, etiological, and intervention studies and for contextualizing the analysis of PR-informed studies. The IPFPR contains five domains: (1) the drivers behind the research; (2) who and how they should participate; (3) the initiation, evolution and sustainability of the partnership; (4) core elements of establishing and maintaining mutual trust and respect, capacity building, empowerment and ownership of the process; and, (5) the added value of the research to both the academic and non-academic partners. Cargo and Mercer (2008) point out interrelationships between the domains to highlight critical issues, potential challenges and barriers, added-value outcomes, as well as facilitators that serve to maximize the effectiveness of PR initiatives. In this dissertation, I found this framework particularly useful in substantiating the findings from, and contextualizing my analysis of, the process aspects of the second phase of the case study.

Challenges in Using Participatory Research

Practical applications of the principles of PR can present a diversity of challenges to the participatory researcher, community members, and other participants (e.g., organizational representatives). Conceptually, in this dissertation, I take the view of PP as being different from applying PR in a practice-based setting by proposing the following description as a notion of PP applied to the field of nutrition education resource development. PP fully engages service users with nutrition professionals in finding solutions to issues of mutual interest that are grounded in and provide solutions to professional practice-based activities (Ledwith & Springett, 2010). This notion contrasts to the research intensive activities that are critical components in studies applying a PR approach to their design. The 'real world' application of a PR approach in practice-based settings is likely limited due in part to the time-intensive nature of meticulously documenting and analyzing the data and disseminating the findings. Although research-directed features can be incorporated into a process using a PP approach, the nature of PP can be less focused on developing theory and more focused on improving practice-based activities set against a backdrop of realizing meaningful gains for all of the partners. PP

appears to be a more reasonable goal even though, it too, requires planning and resources, however implementation of the resolution into practice may be more immediate.

The application of PR or PP is suited to complex processes such as developing educational resources because it incorporates a diversity of perspectives and accommodates a variety of uses. For the purpose of drawing lessons from applying a novel PP approach to developing resources, using a qualitative case study design is suitable because it can elucidate in-depth insight into the process and shape more responsive ways of carrying out this type of practice-based activity. Broader level challenges that are shared with PR can be characterized by, but are not limited to:

- the research issue not originating in the community but with the trained researcher (Green et al., 1995),

- ethical and political dilemmas in achieving equality in participation and power among the research participants (Gaventa & Cornwall, 2006; Wallerstein, 1999),

- the readiness of all participants to appropriately locate power in the hands of community members (Jupp, 2007),

- educational issues of community members preferring to focus on the tasks rather than on learning about the research process and researchers focusing more on the research process than on the tasks (Green et al., 1995),

- economic issues of inadequate or sustained resource support (Israel et al., 1998), and

- agreement from all participants on determining the quality and success of a project (Israel et al., 1998; Kemmis & McTaggart, 2005).

The extent to which the above challenges and the issues of space, power, and human agency shape group dynamics will affect the process and outcomes of each project (Israel et al., 2008). Despite how large or small the challenges may be, in regard to nutrition education there is a need for understanding the ways in which non-professionals can contribute to strategies, processes, and models for developing nutrition education resources.

Communication science and nutrition education bodies of literature point to the importance of resources meeting the needs of the target audience. Given that people's realities are socially and experientially based, yet contingently individualistic in nature (Guba & Lincoln, 1994), when community members collaborate with nutrition educators in PR-informed processes that strengthen research, education, and activities associated with resource development, Koné et al. (2000) note there is greater likelihood for a closer match between resource effectiveness and the day-to-day realities of the people who use the resources.

Applying a Participatory Practice Approach to Developing Nutrition Education Resources

While the body of literature reporting use of PR and other closely related approaches to address health issues continues to grow, few reports of forming partnerships that apply specifically to nutrition education resource development have been published and none exist that use a PP approach. One study used a related process, community organization, in which researchers and community seniors developed a multifaceted nutrition education pilot program (e.g., workshops, recipe exchanges, individual consultations with a dietitian) that resulted in high satisfaction with, and participation in, the activities twelve months post-initiation of the project (Hedley, Keller, Vanderkooy, & Kirkpatrick, 2002). On a larger scale, Ndirangu, Yadrick, Bogle, and Graham-Kresge (2008) recently reported using a community participatory approach to design, implement, and evaluate nutrition interventions at three urban centres in the lower Mississippi delta. Although the study described only one aspect of the research—community committee members' perceptions of the process used—it nonetheless provided insight into how community-academia partnerships function.

In light of very limited literature existing on nutrition resource development and PR, conceptualization of the research reported here relied on examples of PR applied to other issues for insight into the potential benefits and challenges in applying a PP approach to this specific nutrition education practice specialty area. The review of PR conducted by Israel et al. (1998) was particularly informative for providing examples of potential challenges to the practice of nutrition education resource development. They noted:

- Some partners will focus their efforts on completing the task of producing the resource(s) while other partners will be focused on the process and systematic documentation of the activities.

- Management of timelines may also pose a challenge as some partners will want to have tangible products in their hands as quickly as possible to help sustain their motivation in continuing to participate while others will want to take more time to select the content and design features of each resource.

- Involvement in the latter stages of research strengthens the credibility of the findings and increases human capacity. A lack of partnership agency in ownership of data analysis and interpretation and dissemination of the findings is a common occurrence (Cashman et al., 2008; Green et al., 1995): despite this, all partners should be encouraged to participate, to at least some degree, in all phases of the research (Viswanathan et al., 2004).

Due to limited evidence on partnering community members with nutrition professionals and researchers in a fully engaged process to develop nutrition education resources, extracting lessons learned from a case study of PP applied to this practice-based issue is one way to contribute to the literature. Partnering lay and professional women in a collaborative, sustained, and democratic process of developing nutrition education resources that are valued and useful to each stakeholder may offer ideas to nutritionists in adapting their practices to support women making changes to their diets.

Summary of Literature Review

In this literature review, I have presented evidence that supports the need to: (1) examine the context in which midlife women consider bone health in their food choice processes; and, (2) explore the use of PP as an alternative research process that is responsive to questions arising out of practice-based issues. More specifically, the literature supports the need for the case study presented in this dissertation, which garnered in-depth understanding of midlife women's educational needs for food choice and bone health and examined lay

community women and health professionals working collaboratively to produce nutrition education resources aimed at helping midlife women take care of their bone health.

The literature shows much is known about quantitative aspects of Canadian women's diets, but much less about qualitative aspects. The Food Choice Model illustrates how life course events and a range of social to individual factors intersect to determine food decisions among men and women of all ages (Furst et al., 1996). Socioecological models of dietary behaviour change overlap with constructs in the Food Choice Model and inform potential interventions targeted at different levels of influence. The key principles of PR represent an untapped potential for application to nutrition education resource development, particularly as applied to a PP approach. With the recent contribution of a PR practice framework providing a structure for designing, implementing, and evaluating studies using PR principles in public health (Cargo & Mercer, 2008), research that examines ways of involving community members with nutrition educators in developing a solution to an issue of common concern may advance professional practice activities to the benefit of all of the stakeholders. Support for this type of research is clearly articulated in the joint position paper on women's health by Dietitians of Canada and the American Dietetic Association (ADA & DC, 2004).

RESEARCH PURPOSE AND RESEARCH QUESTIONS

The **overarching purpose** of this research was to explore the use of a PP approach to developing nutrition education resources that more fully incorporate intended users' perspectives. The research was conducted in two phases. Due to the importance of understanding the target audience, the research process began with an in-depth exploration of the context in which midlife women consider bone health in their day-to-day food choices. The second phase engaged midlife lay and professional women in a collaborative process— from conception to completion—of developing nutrition education resources that reflect the context of midlife women's everyday lives. The resources informed women on lifestyle choices to support bone health.

Due to a scarcity of literature on using PP as a methodology and a necessary reliance on the PR literature to inform the process, a single-case, qualitative case study approach was

used to explore applying a PP approach to developing bone-related nutrition education resources. Case study methodology typically relies on data collected from multiple sources suitable to the case(s) that are bounded by context and time, and in-depth analysis that draws out conceptual and pragmatic lessons learned from the case(s) (Creswell, 2007). The importance of setting boundaries for case studies in terms of time, place, events, and number of cases increases the possibility of drawing critical insights from the processes (Yin, 2009). With the above issues taken into account, the **overarching research question** of this doctoral work asked: *In what ways can using a participatory practice (PP) approach to develop nutrition education resources be of value to the partner stakeholders?*

With the findings from this research, it is my goal to contribute knowledge toward a greater understanding of midlife women's perceptions, strategies, and needs in terms of considering bone health in their food choices as well as advancing thought on using a PP approach to resolving locally-positioned, practice-based issues that arise in professional practice.

This qualitative case study involved two phases of research. In **Phase I,** six focus groups were conducted with women in midlife (aimed at 40 to 55 years of age) who represented a diversity of ethnocultural and socioeconomic groups. To gain a better understanding of the context for how bone health enters into the food choice processes of midlife women, these **specific research questions** were addressed in Chapter 2:

1. How is bone health balanced with other values of health?

2. In what ways do midlife women consider bone health in their personal food choice processes?

3. What challenges, facilitators, and motivators do midlife women encounter when considering bone health in their food choices?

4. What are the perceived needs of midlife women that will help them choose foods to support bone health?

In **Phase II,** a participatory approach was taken with the formation of a collaborative partnership of midlife community women and nutrition professionals for the purpose of generating nutrition education resources that promote bone health-promoting behaviours. The Phase II project became known as *Bone Health for Women* (BH4W), and was analyzed to provide insight into the use of a PP approach where the intended users of a resource work as peers with nutrition professionals to develop nutrition communication tools suitable for use in daily practice. **Research inquiries** addressed *process* (question 5, Chapter 3) and *experiential* (question 6, Chapter 4) aspects of the BH4W project.

5. What are the process-related tangible and intangible benefits, challenges, and facilitators associated with using a participatory practice (PP) approach to develop nutrition education resources?

6. What are the experiences of the stakeholders engaging in participatory practice (PP) and how do these experiences affect personal and professional practices?

Common to case study research, the extent to which findings generated by this small-scale qualitative research project are transferable to situations elsewhere is likely limited, as each case has its own purpose, aims, processes, and outcomes. Furthermore, motivation of the partners to externally apply what they gained from being engaged in the research may not so much reflect how they valued their participation, but rather how they can adjust current habits in their personal and professional roles to accommodate their new knowledge and skills. Despite these limitations, the lessons learned through examination of the overarching and phase-specific research questions reflect a utility of the findings to professionals who develop educational resources. Figure 1.5 illustrates links between the objectives of the two phases of the research. Findings from Phase I informed Phase II activities and the opinions and beliefs of the partners in Phase II supported the insight gained in Phase I. The infinity symbol with double-ended arrows indicates the interconnectedness of the phase-specific objectives to the overall research design.

In presenting this case study, I have reported the two research phases in the following
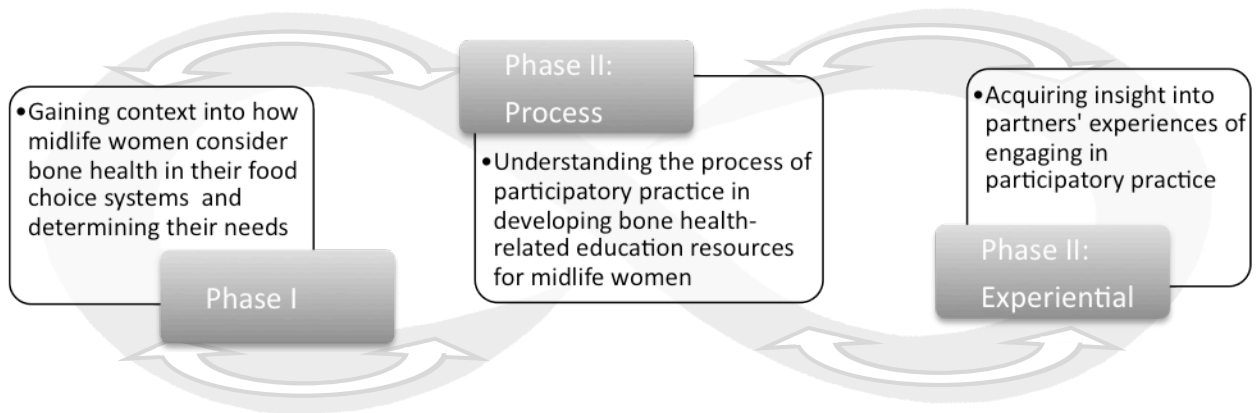
Figure 1.5. Linking Research Objectives: Midlife Women, Food Choice, and Bone Health

three manuscripts: Chapter 2 provides an understanding of the context in which a diversity of midlife women consider bone health in their food choice systems; Chapter 3 provides insight into the challenges encountered, and benefits derived from, using participatory principles in the process of generating two resources; and, Chapter 4 provides a critical analysis of the participants' experiential engagement in the BH4W project. Although I have written chapters 3 and 4 from a third person point of view to allow the reader a singular perspective, because I was an active partner in the research, occasionally I have switched to a first person perspective. Chapter 5, the final chapter in this dissertation, draws out larger issues of space, power, and human agency that underpinned the BH4W project and are relevant to engaging in most partnerships maintained over an extended period of time. As well, I address salient limitations of the two phases of the research.

Within each of chapters 2, 3, and 4, I have provided details on the methods used to gather and theoretically analyze the data. In Chapter 5, I have also provided ideas for future research opportunities in applying a PP approach to the development of educational

resources and included tables that show a summary answer to each research question and a summary of implications for practice for each phase of the research.

Although the complexity of understanding midlife women's perceptions, wants, and needs in terms of nutrition education for bone health wove through all parts of this research, each chapter presents a different perspective that is informed by different bodies of literature. In this way, I have aspired to provide a comprehensive view of the topic of midlife women, food choice, and bone health from the two studies undertaken in this research.

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Chapter 2[2]

"Balance, balance, balance" or "Hoping for the best": Understanding the Context for Considering Bone Health in Midlife Women's Food Choice Systems

INTRODUCTION

Increased incidence of osteoporosis is predicted in the coming decades as the population ages (Brown & Josse, 2002; U.S. Department of Health and Human Services, 2004). Osteoporosis, a condition of low bone density that increases risk of fracture, often leads to substantial social and monetary costs (Brown & Josse, 2002). Only 15% of people with hip fracture are able to walk across a room unaided six months post fracture, and most will rely on family or institutions for their long term care (National Osteoporosis Foundation, 2009). Developing strategies to decrease the risk for osteoporosis is especially important for women, who incur 70% to 80% of fractures (Osteoporosis Canada, 2009).

Osteoporosis is a multifactorial disease with genetic and environmental etiological factors (Heaney, 2000). Diet is considered an important modifiable factor. Compared to men, women have lower intakes of calcium and vitamin D, two key nutrients for bone health (Miller, Jarvis, & McBean, 2001; Poliquin, Joseph, & Gray-Donald, 2009). This has been explained by women's lower overall food intake compared with men (Gray-Donald, Jacobs-Starkey, & Johnson-Down, 2000), and by their tendency to perceive common food sources of calcium, especially dairy products, as higher in fat and calories (Miller et al., 2001). Adding to these observations are epidemiological data showing declining calcium intakes over the lifespan (Briefel & Johnson, 2004; Gray-Donald et al., 2000; Statistics Canada, 2007a; Vatanparast, Dolega-Cieszkowski, & Whiting, 2009) and vitamin D intakes for midlife or older

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women that are markedly lower than current recommendations. Collectively, these data point to women not maximizing the value of their personal food choices to support bone health.

Models and theoretical frameworks that explain personal food choice processes have identified multiple factors contributing to women's suboptimal food choices. These include: women's beliefs about osteoporosis and the benefits and barriers to consuming foods that promote bone health (Janz, Champion, & Strecher, 2002); the complexity of processes used to make food decisions (Chaiken, Liberman, & Eagly, 1989; Onken, Hastie, & Revelle, 1985); the ways in which women balance health, social, personal, and economic concerns when choosing foods and forming stable food trajectories (Devine, Connors, Bisogni, & Sobal, 1998; Furst, Connors, Bisogni, Sobal, & Falk, 1996); and, how dietary communications, in particular, nutrition education efforts impact on dietary behaviour change (Contento, 2007; National Cancer Institute, 2008). For the most part, these models and frameworks were developed in reference to a broad range of people and health concerns. No studies have specifically explored the context of midlife women's food choice processes in relation to bone health concerns, even though this lifestage represents a window of opportunity for adopting health-promoting behaviours because of heightened vulnerability to health concerns (Woods & Mitchell, 1997).

Due to a gap in understanding how midlife women consider bone health in their food choices and their needs for bone health-related nutrition education, a qualitative case study design was used to elucidate ways of addressing these practice-based issues. As part of a larger qualitative case study examining midlife women, food choice, and bone health, this focus group study was therefore conducted to explore how bone health enters into the food choice processes of healthy midlife women. The specific objectives of this first phase of the larger case study were to understand: (1) women's perceptions of the importance of choosing foods for bone health in the context of other factors influencing their food decisions; (2) strategies women use when considering bone health in their food choices; and, (3) women's perceived needs and preferences for information to assist them in choosing foods that support bone health.

METHODS

With a goal to understanding how midlife women consider bone health in their food choice processes, the use of descriptive focus group methodology was appropriate for this phase of the case study because this approach to exploratory research is aimed at learning about participants' perspectives on a particular topic (Harvey-Jordan & Long, 2002; Puchta & Potter, 2004). Methodological guidelines suggest conducting a minimum two to three focus groups per homogeneous group of participants then deciding if additional groups are necessary to reach data saturation (Krueger & Casey, 2009). Sample size, although important in quantitative research is less important in focus group studies, rather the richness of the data collected and the analytical capabilities of the researcher are given importance (Krueger & Casey, 2009). After conducting six focus groups with a convenience sample of 36 midlife women from three income strata (two focus groups per income level) and five to seven participants in each group, consistent redundancies in the data appeared.

Recruitment of Study Participants

Participants responded to an invitation for healthy, midlife (aimed at 40 to 55 years), English-speaking women to participate in a focus group on health held in Vancouver, Canada (Appendix 1). Recruitment was targeted to neighbourhoods and organizations representing different income strata, but for the purpose of sensitivity, the women were not required to have a certain income to participate. Recruitment occurred through word of mouth and snowball sampling, and a local newspaper advertisement was used for one focus group (focus group E). Two focus groups each included women from three income areas: lower (13 women, focus groups A and B), middle (11 women, focus groups C and D), and upper (12 women, focus groups E and F).

Data Collection

Four focus groups were held at community sites, one was held in a participant's home, and one was held in a women's housing complex. Each participant completed a consent form (Appendix 2) and demographic questionnaire (Appendix 3) at the start of a two-hour session,

and received a $20 honorarium following participation. Approval for the study was granted from the University of British Columbia Behavioural Research Ethics Board (Appendix 4) and funding was provided by the Canadian Foundation for Dietetic Research (Appendix 5).

The academic researcher and research assistant developed the focus group facilitator's guide (Appendix 6) using a funnelled, topic-based approach (Figure 2.1) (Krueger & Casey, 2009). The focus group included discussions and a print-based activity (Appendix 7). To summarize, each session began with the women discussing times in their lives when they gave more

1. **PERCEPTIONS OF HEALTH**

   - When did you begin to think about your health more so than previously in your life? Why then? Did this change your food choices?
   - Do you consider health when choosing foods? Explain how.
   - Does bone health fit into your food decisions? Why or why not?

2. **STRATEGIES USED IN CHOOSING FOODS FOR BONE HEALTH**

   - What are the challenges you face in making food choices for bone health?
   - What motivates you to choose foods that you consider as beneficial to your bone health?
   - What are your common sources of information for making dietary choices? Why are these sources important to you? How are these sources important to you?

Figure 2.1. Outline of Funnelled, Topic-based Approach for Focus Groups

thought to their health than previously and how their food choices changed then, if at all. This was followed by a discussion of factors the participants currently consider when making general food decisions. Next, focusing in on bone health, the participants completed the print-based activity that consisted of five components: (1) on the first activity sheet, the women recorded foods they thought supported bone health along with their rationale for each food;

(2) on the second activity sheet they recorded foods they ate that they felt supported bone health and their rationale; (3) this was followed by foods they ate that they felt didn't support bone health and their rationale; (4) messages that would help them improve food choices for bone health; and finally, (5) the types of resources they would like to access to help them make food choices to support their bone health. The print-based activity, which typically took 15 to 20 minutes, was followed by a discussion of where and how women obtained information about food and nutrition and the types of information they valued and why. Questions were pilot-tested for clarity and flow with a group of six women from predominantly upper-income households. No major changes were required, and the pilot data were included in the study.

As the academic researcher, I was experienced in qualitative interviewing and facilitated all six focus groups. The research assistant managed logistics and recorded detailed notes during each session. The facilitator and research assistant met immediately following each session and audio-recorded a dialogue of field notes that included observations of the setting, individual women's behaviours, and interactions among the women.

Data Analysis

All focus group sessions and field notes were audiotaped, transcribed verbatim, and verified for accuracy. Using an iterative data analysis method, the transcripts and paper-based activity sheets were hand-coded (open and axial). In the process of generating summaries for each focus group and each income group, I moved back and forth between the original transcripts and audiotapes and coded segments of the transcripts and activity sheets (Krueger & Casey, 2009). The summaries included common words, phrases, and original quotes to identify data constructs and to ensure preservation of participants' perspectives and authenticity of the developing themes. I used thematic analysis to compare shared themes across the three income groups and unique themes within income groups. Conducting member checks during data collection, peer debriefing with qualitative food choice researchers, and independent and research team analysis of the transcripts were strategies

used to enhance the trustworthiness of the findings (Lincoln & Guba, 1986; Sandelowski, 1995).

FINDINGS

Study Participant Characteristics

Table 2.1 summarizes participants' demographic characteristics. Due to challenges in recruiting women from low-income situations, two participants in this income stratum indicated they were 'younger than 40 years' and two were 'older than 55 years'. Although these women were outside the desired age range, their expressed views were similar to other women. Most participants spoke English at home and were of Caucasian or Canadian descent. The majority of women in the low-income group had annual household incomes less than $20 000, below most proxies used to describe poverty in Canada (Statistics Canada, 2007b). All but one woman in the upper income groups had above-median Canadian family incomes (~$65 000).

Perceptions of the Importance of Choosing Foods for Bone Health

All participants were aware of osteoporosis and the increased risk of fracture with advancing age. They considered bone health an important component of overall health, but only one of many competing demands. Accordingly, women in all of the focus groups emphasized a desire to "*simplify*" food decisions so they could eat for "*holistic*" health rather than manage multiple dietary decisions that were focused on specific aspects of health (e.g., heart health, bone health, management of body weight). This participant raised the challenge of addressing multiple aspects of health in regard to making food decisions for health reasons:

> *One of the problems I find is the competing interest of, you know, it's kind of the cholesterol, it's the bone health, it's … being the right size and all those other competing issues. So it's putting it [food choice] in the context of overall health [with] bone health being one part of overall health. (E-4: Focus Group E, Participant #4)*

Table 2.1   Focus Group Participants

Neighbourhood	'Lower income'		'Middle income'		'Upper income'	
Focus Group	**A**	**B**	**C**	**D**	**E**	**F**
Number of participants	7	6	5	6	6	6
Highest level of education						
Did not complete high school	2	1	0	0	0	0
Completed high school	0	1	0	0	1	0
Attended or completed college, training institute or university	3	3	3	6	3	2
Completed post-graduate program	1	0	2	0	2	4
Missing data	1	1	0	0	0	0
Annual household income						
<$20 000	5	4	0	0	0	0
$20 000 - $40 000	1	1	1	0	0	0
$40 001- $60 000	1	0	1	2	0	1
$60 001- $80 000	0	0	0	3	2	1
$80 001- $100 000	0	0	2	0	1	0
>$100 000	0	0	1	1	1	4
Missing data	0	1	0	0	2	0
Number of children living at home						
0	5	3	1	4	1	1
1-2	1	1	3	1	2	5
3 or more	1	1	1	1	3	0
Missing data	0	1	0	0	0	0
Marital Status						
Single/Never Married	0	1	1	3	1	0
Separated/Divorced or Widowed	6	4	0	0	0	0
Married/Common law/Partnered	1	0	4	3	5	6
Missing Data	0	1	0	0	0	0

Strategies Used for Considering Bone Health in Personal Food Choices

Despite general agreement on an idealized food choice process, participants used different strategies to choose foods for bone health. Three distinct strategies emerged in data analysis: most women were *'staying the course'* by adhering to relatively unchanged food choice systems, three women were consciously *'taking on bone health'* by deliberately increasing their intakes of calcium- and vitamin D-rich foods and/or using supplements, and three others were *'making it easy'* by implementing a simplified food decision strategy that incorporated overall health considerations and most closely aligned with the preferred holistic viewpoint of health.

'Staying the course.' For a variety of reasons, most participants were not actively prioritizing bone health considerations in their diets. As one woman noted in reference to choosing foods for bone health, *It's just a shot in the dark. If we happen to make the right food choices – it's just totally a fluke. A lot of people are just hoping for the best, hoping they're making the right choices. (C-5)* Women from low-income households, many of whom relied on food lines and community meal programs, did not sense choice in acquiring food: *If we don't have money, we don't have choices and it really limits [what we eat]. Just being able to have a basic meal every day is a challenge all on its own. (B-5)* Another woman was clear that she did not need to consider bone health in her food decisions because she did not have osteoporosis in her family.

> I won't say when I'm going to the grocery shop I'm thinking about my bones
> today. I don't. I've never thought about osteoporosis. I've honestly never
> thought about osteoporosis. Even though I'm aware of it, I never thought
> about myself getting it or that I should take calcium or drink more milk. (E-6)

Other women talked about prioritizing different social, health, and economic considerations before bone health in their food choice processes; for example, managing family food preferences, their own body weight, and basic food provision. As one low-income participant said: *Anything health-wise it goes straight to my kids. It's really hard.* When asked where health fit into her own life, she said: *It doesn't. It doesn't when you're raising kids. (B-1)*

Similar to women in the *'taking on bone health'* group described below, some women noted they had a family history of osteoporosis. However, due to a different hierarchy of priorities, these women had not changed their diet or supplement use.

Women in this group were aware of nutrients in dairy foods that supported bone health, but expressed doubt in their nutrient knowledge of other foods that support bone health. Consequently, their "*muddled*" knowledge impeded their ability to choose foods for bone health, and to work toward their desired goal of achieving a simplified food choice system. As one said: *My problem is, if I knew what supported bone health, I'm sure I'd eat it. I don't know what supports bone health. (C-2)*

'Taking on bone health.' Three women were *'taking on bone health'* in their food choice processes by consciously implementing sustained strategies such as purchasing and consuming "*bone-friendly*" foods and using supplements. Each of these women's motivation for making sustained changes was sparked by a close family member or friend living with osteoporosis.

> *My grandmother had osteoporosis and I'm small boned and a good candidate, I understand, for getting osteoporosis, unless I do something about it. So, I exercise and I take calcium supplements because I don't drink a lot of milk, but I do eat yogurt. When I'm grocery shopping I always make sure I have cheese, yogurt, milk, and encourage everybody to eat some of it or take the calcium supplements. (E-5)*

The women who were *'taking on bone health'* were from the middle and upper income groups, and had sufficient resources to allow flexibility in food and supplement purchases. Similar to women in the *'staying the course'* group, these women expressed uncertainty in their knowledge of bone-friendly foods beyond dairy options.

'Making it easy.' Finally, three women expressed satisfaction with strategies they used to simplify food choice processes that incorporated bone health concerns alongside other demands.

I've [become] very conscious of it [food choice] especially in middle age where I've changed. It's about balance in my life and my lifestyle and also the balance in the things that we eat. Those conscious choices about eating a balanced way has really helped me in this age and helped everybody else. ... Just focus on what you need to eat in this kind of whole picture thing and that your life is also about the balance of your rest, you know, then work, rest, exercise, good nutrition, all these kinds of things together. So then I don't feel as overwhelmed approaching it that way. I just think about it differently, all of it. Balance, balance, balance. (F-3)

This woman described how she had systematically shifted her focus from making food decisions focusing on singular issues (e.g., avoiding higher-fat foods for heart health reasons) to choosing a "*balance*" of foods (e.g., choosing to eat more unprocessed foods and balancing "*fruits and vegetables, fibre, fat and protein*" for overall health). In the process of expanding her nutrient knowledge of foods she had started reading food labels, changed cookbooks, and conducted Internet searches to find recipes and learn about nutrition. The other two women in this group did not provide as much insight into how they reached their sense of making easy food decisions: for example, one said, *[I'm] being conscious of making nutritious meals, balanced nutritious meals. I usually have, you know, your protein and your vegetable and your carbohydrates. Just balanced meals*. (E-1)

Preferences for Obtaining Nutrition Information

Regardless of which strategy women used to choose foods for bone health, confidence in their knowledge of foods for bone health could be mapped onto a continuum: a strong sense of confidence was noted in identifying (primarily dairy) food sources of calcium: "*dairy products*", "*milk*", "*yogurt*", "*cheese*", "*sardines, [canned] salmon, any of those fish that you could eat the bones*" and "*fortified soy milk*"; a wavering sense of confidence emerged when discussing non-dairy, calcium-containing foods; and, a weak level of confidence was expressed when identifying vitamin D-containing foods, with the exception of fortified milk and salmon.

I know what dairy products anyway are good for my bones, and I tend to have those things in the fridge all the time anyway. Like milk and cottage cheese and yogourt. When asked to explain why these foods were important, she continued. *The calcium and vitamin D, right? But I'm just saying I'm not as clear about exactly what other – like I think dark greens are good also. I'm not as clear about that but I know that milk and dairy products are high in calcium, right? (E-2)*

Women in all groups wanted simple and actionable information from credible sources that would help build their confidence in making food choices to support overall health. With exposure to a plethora of media reports on food and health information, the women perceived information as often conflicting, confusing, and complicated. The effort required in locating consistent, reliable, and meaningful information that could be easily applied to daily living overwhelmed many women. As one woman noted, *We're bombarded with information…you get to a certain age and you just say, screw it, right? Whatever. I think you get to an age and it's overwhelming. (C-4)* Despite often being overwhelmed, the participants wanted more ideas as long as they were quick and easy to understand tips that would help them make efficient food choices to support overall health.

Just tell me the ten things that I need to do, and I'm going to get on it in a nanosecond because it's easier for me than spending countless time and trying to figure out well, you know, these are sources of protein but then you're going to have too much potassium. Just tell me what I'm supposed to do. Simple, smart. Keep it simple, smart. (F-9)

Websites and print resources were popular and preferred channels for conveying simple information, such as quick "*to do*" lists to guide daily actions. All women felt they had relatively easy access to the Internet, although women in the lower-income neighbourhoods often relied on community computer stations that had time restrictions (usually 1 hour/day). Women from middle- and upper-income households had widespread access to the Internet at home and at work. Internet resources were valued for their currency of information and favoured sites were the "*one-stop*" type, where the women could learn new information, download files, and be linked to other reliable resources (e.g., recipes, tips). Professional health association websites were well respected and perceived as reliable sources of

information. Although access to the Internet was not considered problematic, assessing the large volume of information to locate personally relevant nutrition and health information required concerted effort and time, neither of which most women were willing to make large investments in. Consequently, the Internet was viewed both as a benefit and a barrier to expanding the women's knowledge base and building their confidence to make more informed food choices.

Print resources were valued for their convenience. For example, when time pressures compromised a woman's ability to "*absorb*" detailed information at a clinical appointment, taking home printed information meant that it could be read at a later and more convenient time. A print resource was often expected to provide simple reliable information and could direct the reader to more detailed sources of information (e.g., Internet websites). A perceived potential benefit ascribed to both Internet and print resources was an increased level of confidence in knowing how to make food choices that supported holistic health and implicitly bone health.

DISCUSSION

Perceptions

This focus group study of how women consider bone health in their food choice processes showed that most midlife women did not make eating for bone health a priority. However, ways in which women contextualized the importance of making food choices for bone health revealed a prevailing desire to eat for "*holistic*" health and bone health was considered an important component of overall health. Despite this, few women perceived their food choices met their idealized pattern of eating for holistic health.

Strategies

Women who were *'staying the course'* in their personal food choice systems identified several social, health, and economic barriers that precluded change to their usual food practices and took precedence over dietary actions to promote bone health. This finding suggests these women perceived a low level of threat to their bone health relative to other

more immediate demands in their lives, an interpretation that requires further study but fits with key features of the Food Choice Model (Furst et al., 1996). At the centre of the model are competing core values that people negotiate to establish food choices: for women who were characterized by the *'staying the course'* strategy, nutrition and bone health received low priority relative to other core values such as managing relationships. These findings also corroborate those that DeVault (1991) noted almost twenty years ago—the management of family food dynamics is a common concern for women regardless of income, and often takes precedence over women's personal food choices. In moving out from the core of the Food Choice Model, another feature is the overarching effect of life course events and experiences on personal food choice systems. Throughout the lifespan food trajectories are formed that resist change and tend to stabilize food decisions over time. Personal and environmental forces (e.g., upbringing, roles, health, ethnic traditions, resources, location and the food system) shape food trajectories that are described as a "person's persistent thoughts, feelings, strategies, and actions as she/he approach[es] food choice" (Devine et al., 1998, p. 363). By the time women reach midlife they likely have well-established food trajectories rooted in their life experiences, and for some, their food trajectories may include few foods that are beneficial to bone health. Without a stimulus for change, these women will likely continue adhering to a *'staying the course'* strategy for a protracted period of time.

Further to the above noted social effects on food choices, the women emphasized how a narrow focus on bone health did not fit with how they preferred to consider health in their food choices. Fragmenting health into multiple conditions (e.g., bone health, hypertension, unwanted weight gain) was not favoured; rather the women preferred viewing health as a multifaceted, but single, "*holistic*" entity. In the past, other investigators who have studied the intersection of food choice and health have typically used a non-specific description of health to report their findings (Bisogni, Jastran, Shen, & Devine, 2005; Onken et al., 1985). However, due to specifically focusing on bone health, the study findings were able to add to previous understanding of women's food choices (Hammond & Chapman, 2008) by explicating how midlife women prefer integrating a unified approach to health in their food choices.

Lastly, economic barriers to situating bone health in food decisions were more prevalent with women from lower income areas due to their need to focus on basic survival. As others have shown, poverty is a social determinant of health that impacts on food consumption, whether foods are selected for health or other reasons (e.g., feeding children) or whether food choice simply is not an option (Power, 2005; Tarasuk, 2005).

In addition to the social, health, and economic issues impacting on food choice patterns, understanding why the majority of midlife women do not consider bone health in their daily food choices may be related to osteoporosis being a "silent" disease that often manifests later in life than many other diseases. Hsieh, Novielli, Diamond and Cheruva (2001) found 87% of peri- and post-menopausal women believed osteoporosis was a serious disease that could affect their independence, yet only 29% felt personally susceptible. They also reported women were less concerned with osteoporosis than cancer, cardiovascular disease, and neurological disorders (Hsieh et al., 2001) despite statistics showing women's one-in-six lifetime risk for hip fracture exceeds their one-in-nine lifetime risk for breast cancer (Brown & Josse, 2002; U.S. Department of Health and Human Services, 2004). These and the food choice-focused findings reported in this study raise a question for future research that examines what level of perceived susceptibility is required before women make sustainable dietary and lifestyle changes to support their bone health.

In contrast to the majority of participants who did not give priority to bone health in their food choices, women who were *'taking on bone health'* had a common base for their actions: a proximate experience with osteoporosis. Although few in number, by consciously positioning eating for bone health before holistic health and other life priorities these women's actions were consistent with constructs in the Health Belief Model (Janz et al., 2002). This model explains personal experiences can heighten a perceived threat of disease (e.g., osteoporosis), and the perceived benefits associated with making dietary and lifestyle changes outweigh the barriers to action. The findings from this study cannot fully explain why some women are motivated to take action while others who have similar proximate experiences with osteoporosis do not take action. A study that includes only women who have proximate experiences with osteoporosis and examines ways in which they make their food choices

would extend the findings from this study and may identify strategies that could help women make changes to their usual food practices.

The remaining few women who were *'making it easy'* in their food choices had achieved a sense of using streamlined and systematic food decision processes to support holistic health, and by implication bone health. By investing in establishing a simplified food decision strategy, they may have viewed the initial cognitive effort required as a challenge that they could overcome with long-term benefit to their investment. In effect, the attention these women gave to food had been brought into a sustainable balance relative to other daily demands. Although one woman clearly identified how she had achieved a sense of eating for holistic health, the other two women in this group were not as detailed in how they made their food decisions, suggesting that further research should be undertaken to clearly elucidate how and why women achieve this sense of satisfaction, given that a system of making simplified food decisions to support "*holistic*" health was favoured by the majority of participants. Interestingly, none of these women mentioned using Canada's Food Guide or interactive materials associated with the food guide that provide a framework for making "*holistic*" food choices.

The Heuristic-Systematic Model (HSM) provides theoretical insight into decision-making for the three different strategies used by the women (Chaiken et al., 1989). Participants who were *'staying the course'* relied on heuristic tactics: although streamlined food choice processes were widely desired, adjusting 'tried and true' food decisions at this time in their lives may have been viewed more as a threat to avoid rather than a challenge to undertake and overcome, with costs outweighing the benefits (Bandura, 1997). The HSM points out that systematic decision-making processes require more cognitive effort (Chaiken et al., 1989), and that people are more likely to use heuristic tactics in complex decision-making situations (Onken et al., 1985). Because food choice processes are frequent and involve consideration of many factors, it was not surprising that most women with little or no perceived threat from osteoporosis relied on a heuristic decision-making approach to daily food provision. Furthermore, because heuristic-based actions often resist change, the practice of using minimal cognitive effort reduces the likelihood that most women would change their

food choice behaviours. In contrast, the few women who were *'taking on bone health'* or *'making it easy'* had adopted systematic and cognitively-engaged food and/or supplement use behaviours, although construction of these two strategies were based on different realities with different goals. The former strategy was based on a perceived threat of osteoporosis that compelled women who were *'taking on bone health'* to situate eating for bone health before holistic health even though they idealized eating for holistic health. On the other hand, food actions taken by women who were *'making it easy'* were based on the priority of simplifying food decisions and eating for overall health, including bone health. Regardless of the strategy women were using, they perceived a need to improve their knowledge about nutrients, foods, and health to make more informed food decisions.

Preferences

The range in nutrient knowledge of foods and sketchy knowledge of how much or how frequently to eat these foods provided insight into why most women were "*hoping for the best*" that their food selections met their bone needs. Although habitual strategies directed food decisions, their knowledge of few calcium- and vitamin D-rich foods (except for dairy products and salmon) exposed a self-perceived need to learn more about foods. Although dietitians may argue that it is sufficient for women to know that dairy products and canned salmon are good food sources of calcium and vitamin D, many of the women in this study were interested in other sources of these nutrients. However, past attempts to seek food, nutrient, and health information from various media sources produced feelings of frustration, confusion, and being overwhelmed (Edmunds & Morris, 2000; Goulding, 2001); experiences that interfered with achieving a sense of self-efficacy in eating for holistic health (Johnson-Taylor, Yaroch, Krebs-Smith, & Rodgers, 2007; Wilson, 2007). Women are looking for consistent information across multiple sources that confirm what they have learned; however, when there is a perceived lack of consistency in messages, confusion often results (Wilson, 2007). It is important to understand meaningful types of information because women use information in the processes of contemplating change or changing dietary behaviours (Prochaska, Redding, & Evers, 2008).

Dietary information permeates women's lives: it is ubiquitous whether it is regulated information such as that found on food labels or unregulated such as that found in news stories or on the Internet. Women have access to a steady stream of "new" information; however, many experience "information fatigue" (Edmunds & Morris, 2000)—a sense of feeling overwhelmed by the sheer number of messages to process. In practice, nutritionists who use accurate, simple, and meaningful resources to guide women toward dietary change can reduce the potential for information fatigue. This is an important consideration since research has shown that women who experience information fatigue frequently become disempowered from seeking information (Korp, 2006), and given the importance of information in making food choices to midlife women, becoming disempowered counters the progression of possible behaviour change (Prochaska et al., 2008). With the goal of nutrition education to guide people toward improving their food choices, nutritionists should be aware of strategies that can decrease potential disempowerment. On the other hand, women who have sufficient information literacy skills to find, evaluate, and use the information they need often feel empowered by their efforts (Korp, 2006). Gaining an understanding of the processes that lead to empowerment in seeking information for food choice has the potential to reveal new strategies for delivering nutrition education (Brouwer et al., 2009).

Despite some being undaunted by, and perhaps others lacking an awareness of, the initial investment in cognitive effort required to reach their ideal of streamlined food decisions for holistic health, the women in each of the three characterized groups wanted a steady stream of simple, easy, and smart food-based information: preferably information that would conveniently fit into their daily activities and be available through print and Internet communication channels (Jabs & Devine, 2006; Jabs et al., 2007). Given women's increasing use of the Internet to seek health-related information (Rahmqvist & Bara, 2007), careful consideration should be given to the type of nutrition education resources made available through this channel. Communication science informs us of a need to distinguish between situational and behavioural conditions that influence decisions for developing targeted or tailored messages (Kreuter & Wray, 2003). Tailored messages are more customized and tend to stimulate more cognitive engagement than do targeted messages (Kreuter & Wray, 2003);

therefore, tailored messages may be more suitable for women who are willing to invest time and cognitive effort into expanding their knowledge base and eating for holistic health, such as the women who were '*making it easy*'. The foremost desire of the women in this study was for quick and "*simple, smart*" information such as a list of 10 top things to do for bone that emphasized bone health in the context of overall health, suggesting targeted messages that carry meaning to a broader spectrum of women may be better suited to meeting the needs of the majority of midlife women like those who were '*staying the course*'. To build on this research, an investigation of how different types of information mediate the relationship between exposure and behaviour within an overarching framework such as the Integrative Framework for Research in Diet and Communication (National Cancer Institute, 2008) may provide valuable insight into the choice of using targeted or tailored messages when developing nutrition education resources.

STRENGTHS AND LIMITATIONS

Methodological strengths of this study included data collected across different socioeconomic strata and saturation of data in terms of women discussing their idealized view of eating for holistic health and not directly for bone health. On the other hand, there were several study limitations that are common to qualitative research. First, while women participated from different socioeconomic areas in a major metropolitan centre, there was a relatively small sample size of women sharing homogeneous ethnicity; thus these findings cannot be generalized to the larger population, particularly to other ethnocultural groups. These findings will be most useful in understanding food choice strategies of healthy women with similar characteristics. Second, because this study focused on the cognitive aspects of food choice for bone health among midlife women, no quantitative data were collected that would have provided indications of food and nutrient adequacy relative to current guidelines. And, third, while the data were strongly saturated with regard to midlife women idealizing "eating for holistic health", saturation of how midlife women achieve and sustain this ideal requires further study. Collecting this type of data was constrained by the questions asked in

the focus group guide and requires development of a new focus group guide that is designed to understand this aspect of midlife women's personal food choice systems.

CONCLUSIONS

In conclusion, by exploring food choices through the lens of eating for bone health, we found women in midlife preferred to view health as a single holistic entity that was ideally supported through simple eating practices. As a consequence of viewing health from a holistic perspective, they did not want to give specific attention to bone health in their food choice strategies. These findings provide insight into answering the first two research questions of Phase I of the larger qualitative case study: *How is bone health balanced with other values of health?* and, *In what ways do midlife women consider bone health in their personal food choice processes?* The third research question: *What challenges, facilitators, and motivators do midlife women encounter when considering bone health in their food choices?* can be answered by reasons supporting the three strategies. For example, a common challenge for women who were *'staying the course'* was the priority they gave to meeting family members' food needs over their own; a facilitator for women who were *'making it easy'* related to the heightened value they placed on making healthy food choices and bringing their food decisions into balance with other demands in their lives; and, a motivator for women who were *'taking on bone health'* was exposure to a close family member or friend who was living with osteoporosis. In terms of answering the final research question of this phase of the research, *What are the perceived needs of midlife women that will help them choose foods to support bone health?,* midlife women believed having a better nutrient knowledge of foods would streamline their food decision processes, minimize the attention they gave to daily food provision, and maximize the value of their personal food choices to support bone health. The women wanted simple, credible, and meaningful information that conveniently fit into their daily activities. Given that women are increasingly turning to the Internet for health information, credible websites that target nutrition resources to the needs of midlife women are likely to be better valued and used than other types of websites.

This investigation into gaining greater understanding of the context for how midlife women fit bone health into their food choice strategies revealed that bone health is only one facet of the preferred holistic view of health, and did not receive priority attention by most women. The multiple realities of midlife women make understanding how they eat for bone health a complex issue that requires further study.

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Chapter 3[3]

Using a Participatory Practice Approach to Develop Nutrition Education Resources: Taking Lessons from the Process

INTRODUCTION

Nutrition education is a cornerstone strategy used by nutritionists to help people adopt health-promoting dietary behaviours. A gap between dietary behaviours and dietary guidance has existed in the past and continues today, in particular for certain segments of the population (Forster-Coull, Barr, & Levy-Milne, 2004; Gray-Donald, Jacobs-Starkey, & Johnson-Down, 2000; Jacobs Starkey, Johnson-Down, & Gray-Donald, 2001). Although an array of nutrition education tools has been developed to guide Canadians toward improved dietary choices, the effectiveness of their role in creating sustained dietary behaviour change has been inconsistent (Lytle, 2005; Maibach, Maxfield, Ladin, & Slater, 1995; Nestle et al., 1998; Orleans, 2000). A critical examination of improving the quality of nutrition education efforts necessitates drawing on a broad research base and goes beyond a traditional focus of assessing intervention outcomes to examining processes used to develop intervention tools (Contento et al., 1995). Knowledge that is gained from research into processes used to develop nutrition education resources may provide new theoretical and practical understandings that contribute to desirable behaviour change.

In typical resource development processes used by nutrition educators, tools are often produced in isolation from the intended users, and in many instances other colleagues (Horowitz, Robinson, & Seifer, 2009; Leathem et al., 2009). Communication theory emphasizes the importance of knowing the target audience well for developing quality educational

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messages that have meaning to, and can potentially impact on the behaviour of, the intended users (Fitzgibbons et al., 2007; Hornik & Kelly, 2007). Wilson (2007, p. S18) raised the importance of obtaining an in-depth understanding of the target audience to reduce the risk of "expensive communication failures". In other words, Wilson (2007) contends that sufficient budgetary resources be allocated to the production of educational resources before evaluating the behavioural impact of educational resources. Notwithstanding the emphasis of communication theory on knowing the target audience well, behavioural theories also point to the importance of using behaviour change strategies that fit with the perceived needs of the target audience (Fitzgibbons et al., 2007; Weinstein, 2007). Establishing a collaborative partnership of nutrition education professionals and the users of their services is a novel approach to incorporating the first-hand voices, realities, expertise, and experiences of the stakeholders. This type of partnership can create a bridge between different operating worlds described by Habermas (1987) as lifeworld and systems world. The lifeworld refers to the realm of experiences and communicative interactions that are culturally and inherently familiar to people in their everyday lives. On the other hand, the systems world is composed of organized and structural entities that primarily exist to facilitate power and economic transactions among professionals (Habermas, 1987). Habermas expressed concern for the uncoupling of these two worlds: as systems become more complex, the differential between the two worlds increases, thus limiting a potential for the penetration of ideas across the two-world boundary.

The driver for the research described in this dissertation is rooted in my decade-long experiences of practicing as a community nutrition educator. Working in this capacity, I became increasing disillusioned with the processes my colleagues and I used to develop nutrition education resources. Although we relied on constructs from behaviour change models to guide the resource development process, we precluded the intended user from full engagement in the process, thus reinforcing a two-world boundary in our work. Rather than being oriented from the outset by the experiential knowledge of the resource users, we most often solicited their input at a late draft stage of the resource just prior to a final edit and the launch. It became apparent to me that directing our resources toward protocols unequivocally

driven by professional knowledge without substantive lay input, we inadvertently perpetuated an uncoupling of lifeworlds and system worlds. Moreover, if we focused our attention on the processes used to produce resources rather than on the outcomes from their implementation we may be able to gain insight into more responsive ways of developing resources. With this impetus in mind, I sought to explore this aspect of resource development and entered graduate school.

As a doctoral student, I was accepted into the Partnering in Community Health Research training program. This stimulating and dynamic program provided training for developing, implementing, and evaluating health-related research initiatives originating in different communities. Over a two-year period in the program I was exposed to a range of community-engaged, collaborative approaches to research, including participatory research (PR). In recognizing the constraints of doctoral research and a tension between maintaining the methodological integrity of PR and its utility, I chose to use a PR-informed methodology that I have described as participatory practice (PP). There is very little literature on PP as a methodology and what is available links PP with community development and collective action for social change. As a notion, PP shares core values and principles with PR. For example, both collaborative processes can engage health professionals in partnership and sustained and co-educative dialogue with lay people to generate a new blended type of knowledge that is grounded in local context and can be applied to resolving practice-based issues (Ledwith & Springett, 2010; Ndirangu, Yadrick, Bogle, & Graham-Kresge, 2008; Reason, 1999). For the purpose of the research described in this dissertation, I distinguish PP from PR by its strong applicability to addressing practice-embedded research questions arising out of small-scale professional practice. With this notion of localized context and applicability of PP research, outcomes manifest at the individual and group levels of action moreso than at a community level action for social change that is common to PR. Furthermore, due to the pragmatic nature of PP, it does not necessarily rely on the research-intensive aspects of PR such as ensuring complete documentation of all activities, a thorough analysis of the collected data using established qualitative research techniques, and dissemination of the findings to broad audiences, particularly through academic channels. Although this notion of PP offers

greater flexibility for use and applicability to practice-based activities than a more rigid academic perspective of collaborative inquiry processes, in describing the research in this dissertation I have purposely used the term PP as an approach to answering the practice-derived, context-driven research questions and examined the research-intensive aspects of PR that were implemented throughout the second phase of the larger qualitative case study, referred to as the *Bone Health for Women* (BH4W) study.

Given the large body of PR literature was instrumental in informing my PP approach to research, the recent publication of the Integrative Practice Framework for Participatory Research (IPFPR; Cargo & Mercer, 2008) provided a useful reference for designing, implementing, and evaluating PR-informed descriptive, etiological, and intervention types of studies in the field of public health. The framework structure includes five domains: the values and drivers of the research; the participants and how they are involved in the research; the partnership process and how it unfolds over time; the core elements of PR; and, the value added to each phase of the research. The value of the IPFPR is that it has multi-disciplinary application to PR studies, and can inform studies using a PP approach. To date, most PR applications in public health have been conducted among nurses (Minkler & Wallerstein, 2008) and increasingly among medical practitioners (Boutin-Foster et al., 2008; Levine, 2008); however, PR-informed studies have only been conducted sporadically among nutritionists, most specifically those working in the area of food security (Travers, 1997; Vásquez et al., 2007). By and large, nutrition educators—key communicators of practical dietary advice—have not used participatory processes to develop resources (Travers, 1997). Due to its versatility, the IPFPR is useful for theoretically informing nutritionists of the benefits and challenges of using a PP approach in the practice specialty area of resource development.

Rooted in my experiences as a community nutrition educator and awareness of the imminent entry of baby boomers into their senior years coupled with an existing high, and predicted higher, incidence of osteoporosis among older Canadian women (Leslie et al., 2009), I realized a need to examine the intrinsic value in using a PP approach to develop effective preventive bone health educational resources. This led me to initiate an exploratory, qualitative case study examination of applying a PP approach to the collaborative process of

developing bone health-related resources by and for professional and lay midlife women. The literature suggests a synergistic combination of the 'technical expertise' of nutrition educators and the 'lay expertise' of community members can theoretically improve the likelihood of producing educational resources that closely fit people's needs and assist them in adopting new behaviours (Devine, Brunston, Jastran, & Bisogni, 2006; Viswanathan et al., 2004). However, engaging in this type of collaborative partnership requires a re-visioning of traditional professional practice from one of using minimal, if any, input from intended resource users to one of engaging users in all aspects of a resource development process (Gal & Prigat, 2005).

Given the above context, I initiated the *Bone Health for Women* (BH4W) demonstration project to examine, document, and critically evaluate the process of using a PP approach to develop nutrition education resources. The literature suggests using a PP approach would provide an "insider" understanding of the target audience and resources produced using this approach would closely match the dietary guidance needs of the intended users (Koné et al., 2000). From a dietitian's point of view, the value of producing resources that reflect women's voices, realities, and needs is that these resources may contribute to narrowing the gap between women's dietary behaviours and dietary guidance.

The BH4W project was a small group of midlife women including three lay community women, three dietitians, and a two-member academic research team who formed a collaborative partnership to develop two nutrition education resources designed for their peers to promote food and other lifestyle choices that support bone health. The research question asked: *What are the process-related tangible and intangible benefits, challenges, and facilitators associated with using a participatory practice (PP) approach to develop nutrition education resources?* The primary purpose of answering this research question was to provide nutrition educators with a more informed understanding of the benefits and challenges in using a PP type of collaborative process in the practice area of resource development. In the mutually beneficial educational milieu associated with PP, I anticipated that the nutritionists would learn from the lay women in ways that improve their professional practices and simultaneously the lay women would learn from the nutritionists in ways that may change

their everyday dietary practices (Weiner, 2009). In this chapter, I report the lessons drawn from the process aspects of the BH4W qualitative case study.

METHODS

Overview of the BH4W Project

The BH4W project was the second phase of a larger qualitative case study and was preceded by Phase I, an exploratory focus group study designed to understand the context of how midlife women situate bone health in their food choice strategies (Chapter 2). Given the different ways women from lower income areas considered bone health in their food choices compared with women from middle and upper income areas in the focus group study, and the challenges involved in recruiting women from lower income areas to participate in Phase I, midlife women from middle-class households were recruited to develop nutrition education resources for Phase II of the larger study.

Exploratory qualitative case study methodology was a good fit with the nature of the research question that addressed the process aspects of applying a novel type of collaborative research to developing educational resources. Case studies are defined by clear boundaries around context, time, and place and rely on multiple sources of data to enhance the richness of each case (Yin, 2009). One of the key benefits of capturing rich data is that a detailed holistic analysis of complex real-world activities can be made that takes into account the context of the case (Casey & Houghton, 2010). A common criticism of case studies is the inability to generalize findings to other situations: while this typically holds true, researchers contend that findings can be generalized to theory (Sharp, 1998). By contributing to theory, case study research can extend knowledge and support the on-going development of evidence-based practice (Brophy, 2008).

In the BH4W study, key findings from the earlier six focus groups were incorporated into background material provided to, and discussed among, the partners. Each partner received a $100 honorarium for participating in the project. Eight midlife (40 to 55 years), middle-class, White women—three lay community women, three practicing dietitians, an academic research assistant (a former dietitian), and myself (doctoral student and dietitian)—

all with an interest in bone health participated as partners in the BH4W project over a period of 28 months. The face-to-face meetings spanned four months, the electronic communication phase spanned 20 months, and the private interviews and website focus groups required a further four months. In addition, the process of recruiting partners took approximately three months.

The partners developed two resources: a print resource and website. Two small focus groups (n=4; n=2) were conducted with midlife women who were not otherwise involved in the dissertation research to obtain formative feedback on the print resource. Also, two small focus groups (n= 5; n=3) were conducted with midlife women who were not otherwise involved in the dissertation research to obtain feedback on the website following its launch. Focus group participants received a $20 honorarium with the exception of university administrative staff who declined the honorarium (see page 69). Typical of case study research, multiple sources of data were collected. Table 3.1 presents characteristics of the multiple data sources used. The data set consisted of records of all aspects of the research, including verified verbatim meeting transcripts, meeting minutes, research team debriefings, participant's personal journals, email correspondence, field notes, verbatim transcripts of all focus groups, and the opinion questionnaires completed for the website focus groups. Approval for the research was granted from the University of British Columbia Behavioural Research Ethics Board (Appendix 4) and funding was provided by the Canadian Foundation for Dietetic Research (Appendix 5).

Recruiting the Study Participants

The community partners were recruited through social networking. One of the community women had participated in a focus group in Phase I. Using the snowball technique, she circulated a memo to members of her book club: two women with flexible schedules agreed to participate. Through professional networking, the dietitian partners were purposively recruited from different areas of nutrition education practice—clinical, community, and consumer. All dietitians were involved in developing nutrition education resources in their professional work. A clinical dietitian who worked in the area of

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Table 3.1.   Key Characteristics of Data Sources

Purpose of data source	Data source	Type of information collected	Data collection tool
Documenting the BH4W partnership process	BH4W face-to-face meeting transcripts	Partners' dialogue during their face-to-face meetings	Appendix 8
	BH4W meeting minutes	Overview of meeting activities, steps to take before next meeting	
	Research team debriefing notes	Observations on participant interactions and dialogue at each meeting	
	Academic researcher field notes	Observations on the process at each meeting (e.g., how effectively the discussions advanced or hindered the group moving forward)	
	BH4W partners' personal journals	Personal/professional gains made from engaging in the process; meaningful contributions to the process; frustrations about the process; other thoughts	
	Email correspondence records	Communication chain of evidence while developing the website	
	Private exit interviews	Group and individual experiences of the BH4W partners	Figure 4.1
Formative evaluation of the print resource	Print resource focus group transcripts	Likes/dislikes of the print resource: general, messages, graphics, layout, design	Appendix 11 Appendix 12 Appendix 13
Formative evaluation of the website resource	Pre-focus group website opinion questionnaire	Ways of sourcing online health information; likes/dislikes of the BH4W website resource	Appendix 13 Appendix 14 Appendix 15 Appendix 16 Appendix 17
	BH4W website focus group transcripts	Likes/dislikes of the BH4W website resource; actions taken by visiting the website; usefulness of the website	

osteoporosis was invited to participate and she agreed. She suggested the names of two dietitians: one worked in tele-health services and the other in the clinical practice area of cancer. When asked, the dietitian at the provincial tele-health service agreed to participate and the cancer centre dietitian declined due to feeling over subscribed in her existing commitments. Because it was important to involve dietitians from different practice areas, a dietitian who worked in a supermarket setting was contacted. Health problems precluded her from taking on more commitments; however, she recommended her supermarket colleague who agreed to participate. The research assistant had prior experience as an outpatient dietitian and I had ten years experience as a community nutrition educator.

Exploring the BH4W Process: Gathering the Data

All five face-to-face working group meetings and post-meeting research team debriefings were audio-recorded. Also, using participant observation, I wrote or audio-recorded field notes following each meeting. An audit trail of all email correspondence was maintained. Each partner was asked to keep a personal journal to record their BH4W project experiences and participated in private semi-structured exit interviews. Verbatim transcripts of all audio-recorded sources of data were generated and I verified them for accuracy. A list of key data sources is provided in Table 3.1 found on the preceding page. At the first meeting of the working group, each BH4W partner completed a consent form (Appendix 8). As the group worked through the self-determined process, they developed two resources (Appendix 9).

Exploring the BH4W Process: Analyzing the Data

Transcripts of audio-recorded data were used as the main data set for analyzing the process aspects of the BH4W project. A chronological approach was used to analyze this case study as it allows the tracing of events over time and it allows for examining cause and effect since effect cannot be temporally inverted with cause (Yin, 2009). I began by open coding phrases, concepts, words, and contexts on the transcripts and in analytical memos (Richards & Morse, 2007). As I worked through the tapes, transcripts, and other data sources (Table 3.1), I generated process-specific lessons that were based on frequency, extensiveness, and

forcefulness (e.g., emotive expression) of the data for each sequential period in the project (Beck, 2004; Wuest, 2007; Ying, 2009). By triangulating data sources, I took into account the prominence and meaning of findings from different forms of data and in the lessons learned, I was able to expose convergent and dissonant findings across the data sources. In taking this analytical approach to drawing out lessons learned, I attended to the issues of credibility and dependability during data analysis (Farmer, Robinson, Elliott, & Eyles, 2006). While my use of data triangulation was not intended to create an absolute analysis of the data (i.e., others may interpret the data differently), I did intend to provide plausible and substantiated interpretations of the data as viewed through my lens of being a partner in the project, a midlife woman, and a nutrition educator with an interest in bone health. In drawing out the lessons associated with the BH4W process, the PR literature provided a frame of reference for each lesson either by contextualizing the evidence derived from my analysis in the domains of the IPFPR (Cargo & Mercer, 2008) and into broader views of PR (Israel, Schulz, Parker, & Becker, 1998), or by substantiating the emergent evidence for the purpose of being used alongside other evidence to develop new models appropriate to practice-based activities. I have drawn on the project-specific lessons to produce broader level lessons that contribute to theory and practice and inform practitioners in areas other than nutrition education about the benefits and challenges of using PP in educational resource development processes. In doing this, I again relied on the array of studies that have PR concepts incorporated into the research design. In the remainder of this chapter, I have used italicized text to indicate quotes from the partners in the BH4W working group and participants in the two print resource and two website resource focus groups.

Exploring the BH4W Process: Formative Feedback on the Resources

The participants in the first focus group for the print resource were recruited through word of mouth and worked as office staff at a passenger rail company. The participants in the second focus group for the print resource were also recruited through word of mouth and were university staff in an administrative unit not directly associated with the BH4W project.

The participants for both website focus groups were recruited through an ad placed in a local newspaper (Appendix 10).

To obtain formative feedback on the resources, all four focus groups were audio-recorded. The facilitator's guide for the print resource focus groups contained questions about the messages, graphics, layout, and design (Appendix 11). Each participant in the print resource focus groups completed a consent form (Appendix 12) and demographic questionnaire (Appendix 13) before starting each focus group. Participants who attended a website focus group were emailed a questionnaire (Appendix 14) to complete and bring to their scheduled focus group. The questionnaire asked for opinions on the content, structure, look, language, and tone of two websites that would be compared during the focus groups: the BH4W website (bonehealth4women.ca) and the website of a national organization, Osteoporosis Canada (osteoporosis.ca). Participants were able to refer to their completed pre-focus group questionnaires during the focus groups and submitted them at the end of each focus group. Questions in the facilitator's website focus group guide (Appendix 15) followed a similar pattern to those on the pre-focus group questionnaire. At the start of each website focus group, all participants completed a consent form (Appendix 16) and demographic questionnaire (Appendix 13).

FORMING THE WORKING GROUP

The process of forming this group took approximately three months from recruiting the initial contact to commitment of the final volunteer. The community partners were recruited using a snowball technique, and the dietitian partners were purposively recruited from different areas of nutrition education practice—clinical, community, and consumer. Although a pre-existing working group may have minimized the time required to become operational, the potential for finding an existing local group of healthy midlife community and health professional women with a keen interest in food choice and bone health in Vancouver was small. The Osteoporosis Program at BC Women's Hospital and Health Centre provides nutrition advice to people living with or interested in osteoporosis, and offered access to recruiting women at their regular clinics and educational sessions; however, because the

BH4W project focused on promoting bone health in healthy women and not preventing further bone loss in women already diagnosed with osteoporosis, and the age range of the BH4W partners (40 to 55 year old) was younger than those typically attending the Osteoporosis Program, there was a mismatch between the characteristics of a potential pre-existing group from this program and the overarching goal of the BH4W project, thus requiring the formation of a new group.

Recruitment of the community women and the dietitians was achieved through social and professional networking, respectively. Word of mouth recruitment for midlife community women occurred at a private gym, which led to one of the clients, a participant from Phase I with an interest in participatory processes and in bone health, putting out a call to women through her social networks. Once the call went out, two other community women with flexible schedules and diverse opinions on nutrition were recruited within a short period of time. In terms of recruiting the dietitians, knowing sites representing different areas of practice and in which nutrition education resources were developed was critical to maximizing the potential usefulness of the resources across practice areas. I invited the participation of one clinical dietitian who worked in the area of osteoporosis and she agreed. She suggested the name of a dietitian who worked in tele-health services and one in the clinical practice area of cancer: dietitians at both of these sites develop educational resources. The dietitian whom I contacted at the provincial tele-health service decided to participate. The dietitian in the cancer area of practice declined participation due to feeling over subscribed in her existing commitments. In attempting to have dietitians who developed educational resources in different practice areas, I contacted a dietitian who worked in a supermarket setting and developed consumer education materials. She had health problems and recommended her colleague, whom I contacted and she agreed to participate.

In terms of establishing the number of partners in the working group to achieve effective communication among the members, it was important that group size match the purpose of the work. With the goal of developing nutrition education resources, a large group size was not suitable for the BH4W project: the small group size of eight partners allowed

everyone to be actively involved in the discussions, share in decision-making, take on different roles, and make full contributions toward the successful production of material outcomes.

Diverse perspectives strengthen the PR process and are important to well functioning partnerships; therefore, selectively recruiting dietitians from different areas of practice—clinical, community, and consumer nutrition education—and community women with diverse opinions was critical to the group's activities. There were several advantages to forming the working group: (1) specific and divergent health professionals and community women were recruited; (2) pre-existing group dynamics were not a concern; and, (3) sharing unique and common experiences could occur. For example, the dietitians shared with and learned from others who they normally do not work with in their day-to-day practices, and because of their book club activities the community women were comfortable with sharing their diverse perspectives in the form of spirited discussions. One issue that emerged as the project got underway was the uncertain way in which the work would unfold. The literature gives some attention to this fluidity in terms of its demand on time but gives much less attention to it in terms of its influence on recruiting partners.

Lessons Learned: Forming the Working Group

With the driver of the research rooted in my experiences as a nutrition educator, my community work afforded the opportunity for undertaking a critical analysis of this practice-based issue that is embedded in the subjective worlds of people. The value (or driver) domain found in the IPFPR (Cargo & Mercer, 2008) considers creating knowledge with the purpose of translating research into practice. Just as work in our everyday practice world can inform theory, theory can inform practice, and both aim to shorten the research-practice axis (Thorne, Kirkham, & O'Flynn-Magee, 2004). If we broaden our understanding and acceptance of different types of research we will consequently reframe the relationship between practice and research (Buchanan, 2004). Yet, before many practitioners will engage themselves in studies, it is critical that the research have a practical aim (Huang, 2010). In addressing the issue of engaging practitioners in research, Lawrence Green raised the relevance of

conducting research to shorten the research-practice axis when he asked, "If it is an evidence-based practice, where's the practice-based evidence?" (Green, 2008, p. i20).

In forming the working group, indeed, it may have been more expedient to get the BH4W project underway and easier to work with an existing, appropriately interested, and positively engaged group (Vásquez et al., 2007); however, there are pros and cons to this approach (Israel et al., 1998; Maguire, 1993). When forming the new BH4W group it was important to know key characteristics of the community of potential participants to recruit from and to allow sufficient time for prospective participants to consider their involvement in the project (Cornwall, 2008; Horowitz, Brenner, Lachapelle, Amara, & Arniella, 2009). In the IPFPR, the domain of who should participate and how they should participate points to risks associated with participating in collaborative partnerships (Cargo & Mercer, 2008). It is likely that a different process would have unfolded if community partners who were strangers to each other or different dietitians had been recruited. The community women knew each other yet they held diverse opinions with regard to nutrition and the dietitians knew of each other but had not previously worked together on face-to-face projects. Even though acquaintances may exist among partners, a feature of PP is to recruit for diverse opinions and expertise. In larger scale PR projects, it is not unusual for some partners to know each other, since key informants are often invited to participate and know each other through common networks (Jewkes & Murcott, 1998).

During the recruitment process, it is important to consider establishing a group of appropriate size for partners to be able to work together collaboratively and cohesively as a unit in pursuit of a common, group-determined goal (Johnson & Johnson, 2003; Lasker & Weiss, 2003). Another lesson drawn with implications for recruiting partners was the importance from the outset of addressing the unfolding and uncertain nature of the research process and the uncertain duration of the project, as some potential partners may have less tolerance than others for the uncertainties they will inevitably encounter when engaging in this type of dynamic research (Roussos & Fawcett, 2000). This is a challenge for reasonably estimating a timeframe to include on the research consent form. In summary, Dr. Green's question helped me draw a research-practice lesson from the BH4W project: nutrition

educators should be aware of a need for, and the value in, achieving a dialectical balance between using evidence to inform best practices—or as Green prefers "best processes" (Green, 2001, p. 165)—and using 'real world' practice to inform the generation of new evidence and knowledge (Enosh & Ben-Ari, 2010). Nutrition educators' engagement in these processes is critical to improving practice-based issues. The key lessons learned in the recruitment phase of the BH4W project highlighted a need for planning and identifying key people in the communities of potential partners and disclosing to prospective partners that they will be embarking on an uncertain process in an undeterminable duration of time.

INITIATING THE GROUP WORK

Establishing Group Governance and Process

Informed by the literature on issues of group governance and development, the inaugural meeting was focused on organizational and co-educational aspects of the project that led into brainstorming conceptual ideas for the resources. Common roles for all partners included agreeing to work in an open communicative space that fostered ease in expressing diverse opinions, developing a sense of cohesive partnership, integrating a co-educative approach to the mutual benefit of all group members, and openly discussing challenges that should arise in the group. In addition to the partners' roles of committing to the key principles of PP (shared with PR), shared responsibilities included dialogue that facilitated functioning as a cohesive, positive, empowering, effective, and efficient working group. Divergent responsibilities also existed between the partners with the dietitians being responsible for ensuring the credibility of content in the resources and the community women ensuring the content was useful and meaningful.

In my role as the academic researcher, I drafted an agenda outlining the following items and distributed it via email one week in advance of the initial meeting: introductions, discussing the overarching goal of this phase of the research, presenting and discussing a summary of findings from the Phase I focus group research, discussing good group process and the characteristics of PP as an approach to research, taking beginning steps in determining the format and content of the nutrition education resource, and scheduling next

meetings. In addition to the agenda, I had collated a binder for each member that contained: (1) a summary of Phase I focus group findings (e.g., the context of midlife women lives and how they consider bone health in their food choice systems); (2) information about keeping journals (the purpose, value, and expectations); (3) information on the rationale for the broader research project (e.g., the current state of Canadian women's diets and the need for nutrition education tools that assist Canadian women to improve their bone health-related activities); and, (4) background information from the academic literature on using PR as an approach to research (e.g., *Everybody's engaged, everyone has equal voices, everyone contributes their own perspectives to the process. (Academic Researcher-AR)*).

We discussed group process early in the first meeting to establish and maintain integrity in our partnership that was as effective and ethical as possible. All members agreed on group process operating norms and procedures—open and honest discussion and actions that promoted understanding of diverse views and led to decisions appropriate to the aim of the project. The BH4W group relied on decision-making by consensus rather than other group processes that were inappropriate to our PP approach (e.g., decisions by authority or expert members, averaging members' opinions).

Getting the Work Underway

The members brought their own perspectives to the group and discussed how the findings from Phase I fit with their perceptions. Taking into account different sources of information, the partners were responsible for establishing the procedures of the group and for deciding the form, content, and distribution of the resources. In my role as academic researcher, I invited everyone to learn more about the research process by participating in writing the BH4W story—from data analysis to manuscripts—to co-presenting the findings at future conferences or community sites; however, at this early stage, and in response to later invitations, none chose to be involved in these academic aspects of the project.

Beginning at this initial meeting, the research aspect of the BH4W project relied on using multiple common forms of documentation (audio-taping meetings, field notes, focus groups, private interviews) as well as one less commonly used form—personal journals of the

participants' experiences in the project. The value in matching techniques used for documenting activities to the nature of the research helps to corroborate evidence for the research findings. Audio-recording each meeting, recording field notes, keeping an audit trail of email correspondence, and participating in private interviews were mechanisms readily accepted by the participants; however, the members reacted hesitantly when asked to keep personal journals of their experiences in the BH4W project. The potential importance of journals as a rich source of personal and individual data serves at least two purposes: one, entries may or may not echo public discussions at the group meetings, and two, the entries may also serve to connect personal ideas with experiences that are more broadly shared among the women. Despite having valuable academic purpose and despite the fact that some partners valued keeping journals for personal purposes, when asked to record their thoughts, feelings, and other critical reflections of their experiences in the BH4W project, one dietitian responded in a doubting voice, *You want us to diary?* When checking in at our second meeting and asked how the journal-keeping component was going, she expanded on her earlier reaction.

> *Oh, man. I spend my life, every minute of work I have to record how I do it so I've got all that and then I don't know, I feel like I keep the family menu organized and I record my physical activity and it's like, 'Oh my God, one more place where I have to write.' But then I do think about it and I tend to just do a brain dump so I just did that this morning. I'd rather just, you know, let the thoughts roll around and then one day just spit them out. And if I have a date, like the meeting was today so I knew I had to get it done yesterday or this morning, and so that's it. Yeah, I mostly put down stuff about aside from complaining a little bit about having to journal, then it's mostly just thoughts about what would go in the tool.*

From the outset of the project, a noticeable difference in orientation existed, with the community women and dietitians' attention focused on the tasks to be performed (i.e., resource formats, content, distribution). In contrast, in my role as the academic researcher and stemming from my past experiences as a community nutrition educator, my interest weighed more heavily on the feasibility of using a PP approach to complete the tasks (e.g., fostering collaborative attitudes and equitable engagement, developing mutual trust,

democratizing power and control, encouraging cooperative learning, and documenting all activities) primarily to inform practice-based resource development processes. These differences in orientation were not absolute and overlapped considerably; however, the challenge lay in finding a balance between achieving the task and process goals of the project. The BH4W team openly discussed the tasks that needed to be completed and developed ways in which to complete them, and through open dialogue and using a variety of techniques to keep a comprehensive audit trail of all group activities, the process goals of the project were also achieved.

In deciding on the types of resources to develop, the BH4W partners valued taking a holistic view of bone health—one that included food, exercise, and supplement use—which echoed findings from Phase I. In support of this holistic approach, one community woman noted,

> *To me what it [holistic] means, it's not just nutrition, but it's also – well, it's supplements and exercise, right? You could have the right food, if you're lucky, but I don't think that in a day you could eat all the necessities. You know, I think you need supplements with it.*

This broader approach to bone health differs from a nutrition-only perspective and along with the women's desire to be contemporary with their peers accounted for the partners developing two resources. The decision to develop a print resource and a website was rationalized on two points: (1) a print resource was useful to women with no ready access to a computer and could contain key actionable information without being too detailed, and (2) the Internet has become a common place for women to seek health information either at home or in the workplace, therefore, a website fit with a contemporary popular way to source health information. As one community woman noted:

> *See the thing is, our age group is sort of the last of the dinosaurs and we don't think of always going to websites. So, even though we all have computers in our houses, it's not always our first thought.*

These decisions represent examples of the flexibility that is an essential quality of all partners engaged in PP. Despite the impact of these types of decisions on available project

resources, the partners were committed to successfully achieving both the task and process goals of the project. Although we drew heavily on our own skills to produce the two resources, we had to rely on others to complete both resources, which added time and slowed the pace of activity. On one hand, the dietitians' technical expertise was challenged by the shift away from nutrition to including broader modifying influences on bone health. On the other hand, the community women were challenged by the amount of detail the dietitians wanted to include in the print resource and the time everyone spent on wordsmithing the content so that it was accurate but also reflected a potential use in their lives.

The group agreed on a number of conceptual priorities for the resources: these included that the resources should be simple and easy to understand with an appropriate amount of text, reading level, and positive tone to the messages; be eye-catching, colourful and unique in design; include actionable ideas; and, have an interactive feature.

While discussing the conceptual priorities for the resources, knowledge gaps between the women became apparent. To manage the gaps, the women engaged in open and alternating 'question and answer' exchanges wherein the nutritionists learned about the community women's scope of bone health-related knowledge, and the community women gained knowledge on different aspects of bone health. For example, a community woman expressed concern over the quantity of food that would need to be consumed to reach the recommended amount of nutrition (e.g., 1200 milligrams of calcium every day). *In order to get all this nutrition, you know, you have to eat a lot. I'm a big eater but I cannot—that's a lot of food that you have to take in.* A dietitian acknowledged that getting enough calcium could be challenging especially if dairy products are not consumed, and another dietitian added to this dialogue suggesting supplements could be used. This same community woman wondered:

> *If you eat this but you don't do exercise, even though you're eating the right*
> *amount, you know, how does it work? Do you benefit more from what you eat*
> *if you do exercise at the same time?* To which a dietitian replied: *What we're*
> *aiming to do is minimize bone loss [at midlife] and so doing weight-bearing*
> *exercise and resistance exercise will help you to minimize bone loss. So sure,*
> *we'd like to see people do the nutrition stuff right and we'd also like to see*
> *them be physically active in the right way.*

A respectful dialectical and co-educational type of exchange continued throughout the project that helped to strengthen the working relationships among group members.

In effect, through their honest, authentic, and engaged dialogue, the group respected the strengths that each member brought to the group and worked with their differences in knowledge: as time passed, the value of 'lay expertise' and 'technical expertise' came into greater balance. The co-educative process allowed the community women to recognize the complexities of trying to provide accurate nutrition information to the public and allowed the dietitians to realize the practical, value-laden expertise that the community women brought to the table.

With the inaugural meeting focused on organizational aspects of the project, conceptualizing ideas for the resources, and co-education among the partners, the following four face-to-face meetings centered on producing the print resource and determining the preliminary structure and content for the website.

Lessons Learned: Initiating the Group Work

<u>*Establishing group governance and process:*</u> Addressing members' uncertainties and expectations by adopting and employing ethical group process principles that have a good fit with participatory principles was essential from the outset of this project (Becker, Israel, & Allen, 2005; Johnson & Johnson, 2003). Although negotiating a good fit is essential, Israel et al. (2005, p. 1464) point out, "There is no one set of principles that will be applicable for all partnerships; rather, all partnerships need to jointly decide what their core values and guiding principles will be." In the BH4W partnership, space was opened early and fostered an open exchange of dialogue and developing relationships. In the IPFPR domain of partnership process, Cargo and Mercer (2008) highlight issues of engagement, formalization, mobilization, and maintenance associated with the evolving nature of the partnership. Establishing a process for good group interactions is a vital component of the framework.

At this early stage, each woman became engaged, which was critical to building healthy working relationships in the BH4W project. Group development theory informs us the inaugural meeting is a time when little has been agreed upon, individual roles and

responsibilities are uncertain, and the goal(s) of the work and the process for achieving the goal(s) are mostly unclear (Tuckman & Jensen, 1977). Furthermore, members of a newly formed group expect: (1) someone to take on a leadership role, (2) clear and open communication, and (3) opportunities to build cohesiveness and trust in the group (Blair, 1991). At this stage, it is not unusual for the person(s) who initiated the formation of the group to initially assume the role of leader(s) or facilitator(s) as in the BH4W study (Israel et al., 1998). However, as Cargo and Mercer (2008) have pointed out, and partners in the BH4W project practiced, beyond this point any partner at any time could guide the discussions or address group process issues. Jones and Wells (2007) have described using PR as a series of visions, valleys, and victories. During the initial meeting, the BH4W members established *their* vision for acceptable group process norms, which could also be considered a victory due to its positive impact on the working relationships for the duration of the project.

Getting the work underway: The importance of using appropriate mechanisms for documenting the research process is well documented in the literature (Buchanan, Miller, & Wallerstein, 2007; Hunt, 2009). Triangulation is a common technique that can complement the methodological paradigm and be used to corroborate evidence for findings from the research (Farmer et al., 2006). In an attempt to capture a deeper understanding of the women's experiences in the BH4W project, the journal-keeping activity proved to be a challenge for the women and as a result provided a lesson learned. Although journal entries may provide a greater understanding of people's experiences of their participation, the BH4W journals resulted in scant additional information and illustrated a mismatch between the different foci of the academic researcher on the process and other members on the tasks. In an attempt to strengthen the research evidence, keeping journals proved to be in discord with the women completing the tasks necessary to achieve the group's outcome goals. The PR literature suggests participants engage in activities congruent with their abilities and interests (Israel et al., 1998; Lasker, Weiss, & Miller, 2001). Ideally the BH4W partners should have identified documentation tools that fit with the goals of the project and with their lives outside of the project. Rather than relying on written accounts of their experiences, examples of other potential tools include personal recorders for documenting their perspectives,

thoughts, and ideas, and drawing visual maps or diagrams that connect ideas, concepts, opinions, and other project-related experiences. Despite this lesson, it is not unlikely that researchers in PR and PP projects will be turned to for ideas on collecting rich data. It therefore becomes an ethical as well as a methodological consideration to be aware of, and to suggest using, tools that match the willingness and ability of the participants to complete to a level of their satisfaction (Lasker et al., 2001).

Despite apparent differences in the orientations of the partners, with the balance tilted by sheer number toward an emphasis on tasks rather than process, the women acknowledged the important values inherent in each orientation such that they did not become a source of conflict in the group (Buchanan, 1996). In establishing a sense of mutual trust and respect with each other and increasing their capacity to value and work with diverse perspectives, the women minimized the potential for conflict arising out of the different orientations. The core elements of PR are integral components of the IPFPR (Cargo & Mercer, 2008) and have cumulative effects in fostering acceptance of different perspectives and building strong relationships as the process unfolds.

With no methodological blueprint for PP, the fluid nature of it requires all partners to be flexible to the unfolding of the process and responsive to each member's "felt needs'' (Park, 1999, p. 143). The BH4W members established their vision for incorporating a holistic perspective into two health education resources. Although this placed pressure on the limited BH4W budget, the group felt committed to follow through with developing both resources. Drawing from this experience, it is important to consider the demands placed on available resources as unfolding decisions are made, and take the necessary time to openly discuss and resolve budgetary issues as they arise. The dynamic nature of PR is considered one of its attributes; however, change and the consequent impact on anticipated time and work plans can potentially jeopardize successful completion of the project's goal (CTSA, 2007; Horowitz et al., 2009b). To accommodate change, there is an underlying need for adequate funding. As changes evolve in projects, decisions on how to proceed should be made within the confines of the budget, need to arise out of a discussion by all partners to generate novel solutions. Decisions may be made to seek further funding, make changes that the current budget can

accommodate, or rely on the goodwill of people both within and external to the working group, as was the case with the BH4W project (Buchanan et al., 2007).

As expected with a diverse group, the partners' opinions and ideas, and the context for them revealed different types of knowledge. Managing knowledge gaps through the exchange of information is critical to the co-educative principle of PR and to achieving the goal of the research (Israel et al., 1998). Pratt (2007) proposed that partners work *with* the differences in knowledge, as was done in the open exchanges of knowledge among BH4W partners, rather than working intractably in their respective areas of technical or lay knowledge. It is through critical reflection on the merging of different types of knowledge that a new relational type of common knowledge was generated and useful to all of the partners (Pinto, 2009). Furthermore, in parallel to partners determining appropriate data collection tools, they should also determine appropriate channels for dissemination of the research findings.

In summary, establishing a good fit between group process and principles of PP, employing documentation techniques that are acceptable and useful to the group, managing different orientations to tasks and process, ensuring adequate funding that will sustain the unpredictable nature of each project, and blending the partners' diverse expertise to the mutual benefit of everyone involved are critical features to consider when initiating work in an ethical and participatory way.

ACCOMPLISHING THE WORK — FACE-TO-FACE

Throughout development of the print resource, our group norm of establishing an open communicative space for each woman was evident in the contribution of ideas suggested for the print resource: ideas for the format included a standard "rack" sized card, postcard with a detachable shopping list, two-fold or three-fold brochure with a tear-off portion, bookmark, poster, and fridge magnet. Ideas for the specific content included ethnic foods, simple key messages, recipes that help guide women's food choices to better bone health, a link to the companion website, and excluding technical content such as using the terms "serving" and "milligrams". Other ideas included producing the print resource in more than one language and distributing it in a variety of community and clinical settings.

Our consensus model of decision-making worked well for the duration of the project. The women collegially offered, acknowledged, and supported practical and realistic ideas that they felt they could incorporate into their own lives or into their professional practice. For example, during the discussion of a detachable shopping list for the print resource, the research assistant suggested women could take the *little tear-off piece to the grocery store* and the other women immediately supported this idea. Oftentimes, one idea was offered and then refined in an iterative style of group discussion until consensus was achieved. The following interchange illustrates how we negotiated wording for the title of the print resource: *What have you done for your bones today?* This interchange followed a discussion of the statistic that one in four Canadian women will develop osteoporosis.

> *Research assistant (RA): You don't want negativity – you want to keep it positive.*
>
> *Community woman-2 (CW-2): How about: Healthy bones…are you the one? [referring to the one in four statistic]*
>
> *Dietetic intern (DI): Well, that almost sounds to me like, Are you the one with them? I just think it's kind of tricky. I think it would confuse people a little bit, like healthy bones, are you the one in four that will get osteo?*
>
> *Dietitian-3 (D-3): Well, if you said healthy bones, you'd almost have to say one in four women will get osteoporosis after 50. How strong are your bones? Or, something like that.*
>
> *Academic researcher (AR): I think you have to catch them right away.*
>
> *CW-2: What have you done for your bones today? Or something.*
>
> *RA: Yeah. What have you done for your bones lately, or something like that.*
>
> *Multiple responses: I like that.*
>
> *DI: Yeah, because it's got to be a today thing, like it's got to be today, or, What are you doing today?*
>
> *CW-2: Because they're shopping.*
>
> *D-3: Like are you shopping? Are you eating something calcium-rich?*
>
> *RA: That's a good idea because the other thing that came up, I keep talking about the focus groups [Phase I], is they wanted a holistic approach. You know, they wanted something that would tie into like a general healthy diet. So, something like that.*

D-2: And I hope we do – like I've got that down, too. And I sort of got that message from community women here and from what you said about the focus groups, and I get that from my clients, too. Like I say, they're a little disappointed with the Calcium Calculator because it only targets the high calcium foods, and they just keep saying to me, Well, and I do this and I do that, and I'm like, Oh, that's all great. That's really good and, you know, don't despair about this. This is just focusing on calcium. And we do want to eat well. I mean we want to get rid of that yo-yo dieting garbage and, you know, people who don't get all their fruits and vegetables and everything in, because other stuff is involved, too. And so I do like the holistic thing.

D-3: So yeah, if you get a question, like that you came up with, which says, you know: What have you done for your bones today? and on the back can be those ideas of what you need to do. It doesn't necessarily say, Every day you should be doing this, because then again there's that, You better be doing it or you're in trouble, but it could be weight bearing exercise, the calcium, the Vitamin D, or you know, getting outside in the sunshine or whatever. Like it can be a very fun approach to it.

During our third meeting, we had an offer of help from a graphic artist to design the print resource. The group gave detailed attention to wordsmithing simple content for the print resource (key messages and shopping lists) to get it ready for the graphic designer, and decided to expand on this content in the website. For example, when discussing the complexities associated with selecting calcium-containing foods to include on the detachable shopping list, one dietitian emphasized a need to acknowledge the importance of consuming a varied and balanced diet. In response to this need, and as an example of the community women co-educating the dietitians, the community women stated their lack of clear understanding of the concepts of dietary variety and balance. As a result, these concepts were assigned to the website to keep the messages on the print resource simple, clear, understandable, and actionable. The pace of work accelerated during the third meeting, in part because the women were functioning as a cohesive group and enjoyed working together, had decided on a card format with detachable shopping list, and had a good start on specific content for the print resource. By the end of this meeting, the group had created three different concepts for presentation to the graphic designer: a woman with thought bubbles of foods, exercise ideas, and supplements; a superwoman action-figure pushing a loaded

shopping cart; and, a blue-collar woman holding a tool kit filled with exercise equipment, foods, and supplement containers.

When we met for the fourth time, the initial discussion centered on the group's ability to meet projected timelines. One community woman expressed her concern over the amount of work left to do exceeding the anticipated 12 to 16 hour time commitment stated on the consent form (Appendix 8). She said, *The website, I think, is going to be huge, and I'm not worried about the time and I know [CW-2 and CW-3] aren't because we have our flexible work schedules.* With no internal expertise in website development and no budget, we knew we had to rely on external in-kind support that we found in the Faculty of Land and Food Systems Learning Centre at the University of British Columbia.

In response to perceived time pressures, one community woman suggested we strategically reorganize into three teams of two—one community woman and one dietitian— for developing the content of the food, exercise, and supplement use pages for the website. I accepted responsibility for developing the content of the home page and another page with recipes and myths that we had previously discussed. The two-member teams agreed to sketch out three sections for their respective web pages: a narrative from the community woman reflecting how she perceived the importance of the web page topic intersected with her life, an educational and informational section for their topic, and a section that contained reliable web links to their topic. The perceived value of the narratives was that visitors to the website may find some aspect in one or more of the narratives that pertained to their own lives and that this may motivate them to read further down on the same page or other pages of the website to find a bone health-promoting idea they could incorporate into their lives. To complete the work needed for the content of the website, the change to two-member teams was the first of two strategic organizational moves during the project. The ability to adapt the process to pressures perceived within the group exemplified a well-functioning group wherein each partner felt free to take on a rotating or distributed-actions type of leadership role that moved the project forward.

Our final face-to-face meeting was held offsite from our usual community/clinical setting at the BC Women's Health Centre to the Learning Centre in the Faculty of Land and

Food Systems where we could meet the people who were to provide us with guidance on website development. At this meeting, the teams reported varying degrees of completion on their web page content. Also, based on renditions we had received back from the graphic designer, we opted for the design of the woman with a tool kit for the print resource. We worked through finalizing the content of the print resource and compiling feedback on the design for the graphic artist. Confidence in the quality and usefulness of the print resource was high among the group—the group perceived they had a reader-friendly resource (Appendix 9) with action-oriented ideas appropriate for immediate implementation and a link to the BH4W website for more detailed information. Because one dietitian was absent from the meeting and we ran late on time resulting in another dietitian leaving before the end of the meeting, we agreed to set our next meeting date by email. This was the second strategic organizational move and represented a critical turning point in the project.

Lessons Learned: Accomplishing the Work Face-to-Face

Face-to-face meetings were crucial for removing barriers between the dietitians and community women by ensuring an open communicative space, developing a sense of cohesiveness among the group members, establishing a common goal, resolving challenges that arose, learning from each other, building capacity, and achieving project-specific personal and professional goals. Engaging with other women of a similar sociodemographic profile on a topic of mutual interest was marked as a value-added asset of the women's participation in the BH4W project. The enjoyment of this aspect of the process and the human capital gained among friends and family are features that are acknowledged in the IPFPR domain of interpreting and applying research outcomes to a broader community (Cargo & Mercer, 2008). Furthermore, establishing and maintaining the concept of open communicative space was critical for discussions that included a diversity of opinions, beliefs, and perspectives (Habermas, 1984; Wicks & Reason, 2009).

Many of the above noted visions and victories (Jones & Wells, 2007) were evident during initiation of the group work but also applied to the ongoing work. One victory was the efficiency in achieving consensus among the partners. While this aspect of group process can

vary with each partnership, Lasker and Weiss (2003) have reported that partners' functional characteristics can impact on efficiencies in completing the work in PP projects. The functional characteristics of the BH4W women included that they were mature, open, communicative, and committed to producing useful resources, all of which may have reduced the potential for conflict and increased the efficiency of this group. Perhaps a more salient victory evident in the face-to-face work was the "distributed-actions" approach to leadership, defined by Johnson and Johnson (2003, p. 187) as members performing in ways that help the group complete the necessary tasks while maintaining effective working relationships. The strategic shifts in operation of the group that advanced developing the content for the BH4W resources signaled a well-functioning group process.

Despite positive aspects to the work, a notable valley was evident in the face-to-face meetings. Scheduling meetings was the most frustrating and time-consuming challenge encountered during our face-to-face meetings: the costs were numerous and often with suboptimal results. At worst, two of the eight participants missed attendance at a meeting; although the working group moved forward with the project, the absent participants felt "*bad*" about missing the meeting due to scheduling conflicts. Establishing a pre-set meeting schedule is difficult to do when it is unknown how the research will unfold and what amount of work will be required between meetings. Furthermore, factoring in people's personal holiday, work, and general daily life schedules added to the amount of time taken to set the next meeting date. The literature offers formal strategies—announcement, bidding, and commitment—for efficiently establishing meeting schedules under different sets of conditions (Sen & Durfee, 1998). In the BH4W project, we used an informal bidding strategy for setting most meetings wherein, upon consideration for activities in the personal and professional lives of the participants and the between-meeting work required, meeting-by-meeting one partner would propose a date and time and we decided on the next meeting date. Only once did we commit to two sequential meetings. Working through this considerable valley during the face-to-face meetings highlighted a need to discuss ways to reduce potential frustrations and increase efficiencies as early in the inaugural meeting as possible. At this point, the group ought to decide on using a specific strategy or hybrid strategy (e.g., announcement/bidding)

to schedule meetings (Sen & Durfee, 1998), and set meeting dates that are well spaced and committed to by all for a period of time (e.g., 4 months).

In summary, working face-to-face in an open communicative space supports the contribution to, and consideration of, a diversity of ideas from all partners; fluid negotiations for completing task-specific work; and, the opportunity for rotating leadership among the members. Flexibility is a hallmark attribute of PP partners, and it is of particular important when managing challenges that slow the progress of the work. Selecting a strategy for scheduling meetings ought to be done early in each project to avoid later disruptions, frustrations, and lost time.

ACCOMPLISHING THE WORK — ELECTRONICALLY

Due to the participants' work and personal schedules, scheduling face-to-face meetings eventually proved impracticable. At this pivotal point in the project, we agreed to proceed using electronic communication channels. In our email exchanges we finalized minor revisions to the second draft of the print resource, which was subsequently tested with two small focus groups of four and two community women, respectively. The working group supported the minor revisions resulting from the external feedback (e.g., deleting descriptive text on the calcium shopping list, moving the location of text for the website, choosing a colour scheme). The print resource was then ready for printing (Appendix 9).

In contrast to developing the print resource over the course of five face-to-face meetings and a small number of follow-up emails, changing to our electronic arrangement adversely affected the efficiency of completing our preparatory work for the website. Some of the deeper valleys we encountered while developing the website included: becoming familiar with and using a website software application; online deadlines that came and went; teammate correspondence that was slow; a trickling in of group feedback on drafts of the team-generated web page content; and, a missing sense of social connectedness that was valued in the face-to-face meetings. Furthermore, one community woman with a health condition withdrew from the project. On the technical side, support staff at the Learning Centre mocked up a website that was not well liked by the group. Moreover, the Learning

Centre lost the staff member who provided key support to the BH4W group and hiring a new staff member took an extended period of time. In essence, our electronic phase of 'meetings' affected psychosocial aspects of the members as the group circumstances took a sharp turn from the cohesive community environment experienced during the face-to-face meetings. Although the BH4W project faced many hurdles, regular updates of small, yet progressive steps were circulated among the working group (approximately every two months) and were responded to with enthusiasm, encouragement, and continued interest. The partners remained committed to reaching their goal.

Although the women liked the idea of providing narratives on the website, debate ensued over whose stories should be told. The community women initially questioned the potential value of sharing *their* stories. This led to a discussion of the basic premise of the website, "*women talking to women*" to enhance bone health through the adoption of healthy lifestyle choices. Realizing how their personal stories may resonate with other women to achieve the intended goal of the resource, the community women wrote the narratives with the clear intent that their stories would not be representative of their peers, rather the stories may simply be valued by their peers. Selection of the topic for each community woman's story fell along the lines of their natural interests: one community woman was an ardent supplement user to ease her tensions associated with "*proper*" food intake, another was just as ardent a believer in not using supplements but caring for herself through diet and exercise, and the other was a keen believer in physical activity. The dietitians also chose to work on web page topics that aligned with their interests. This resulted in two-member teams with particular interest in their respective web page topics.

In terms of the different web pages, we decided to include one page with the following two sections—Tips for Healthy Bones and Recipes for Bone Health. The title of the tips section was changed from Myths about Bone Health to keep a positive tone and to address one community woman's concern that women who read the myths may feel foolish for having believed them. The recipes selected were rich in calcium and/or vitamin D and were included because "*they could help someone to get the most for their bones*" (community woman).

Nutrient analysis was completed for all the recipes and total energy, calcium, and vitamin D were reported. Each recipe is downloadable from the BH4W website in PDF format.

Gradually the website took shape as the narratives were finalized, the information and web links sections were combed through for accuracy and assessed by a plain language specialist, the images for the page banners were created, technical support in using the website software tapered, and website formatting was completed.

In contrast to when we met face-to-face and had achieved a sense of collegiality and mutual respect, made prompt decisions, and accomplished goals, the participants' commitment to the project, which was now expressed and filtered through text in emails, waned in intensity and feeling but nonetheless remained solid. Small victories were won as the website took shape and member confidence in the quality of our product grew through this lengthy process. Also, during our face-to-face meetings, we had discussed how we wanted our website to be distinct from others. The premise of the BH4W website was "*women talking to women*," and thus our website shared personal stories from midlife women about bone health and linked the themes of these stories to readily accessible, reliable, and accurate information. Our holistic approach to bone health was intended to recognize the multiple realities of women's lives as busy and complex, in which exercise and diet are often given lower priority than other issues. Aligned with a holistic approach, it was also important to the women that our website be simple and offer an easy-to-read and positive focus on bone health rather than a focus on bone disease. The women clearly wanted a preventive approach to bone health. Six dietitians reviewed the content of the website and noted the need for specific corrections (e.g., numerical values of nutrients in certain food and guidance for particular types of exercise). These reviews were important given that the BH4W dietitians had responsibility for ensuring accuracy of the resources whereas the community women had responsibility for ensuring the content made sense and had meaning in their lives. Changes were circulated to the partners through email to obtain further input. The working group partners were confident in the accuracy and reliability of the website: this was also found in the feedback provided by participants in the two website focus groups. Visitors to the BH4W website (bonehealth4women.ca) can read and/or listen to, and perhaps find something in

their lives that is common to any of the three community women's narratives, and hopefully be inspired to adopt actions or learn more about lifestyle choices that benefit their bones.

Lessons Learned: Accomplishing the Work Electronically

Our switch to electronic-based work challenged us in many ways. Waves of interest among the partners was not unexpected as PP processes can occur over an extended period of time and competing demands can take focus away from the work (Polanyi & Cockburn, 2003; Weiner, 2009). However, the perseverance and commitment of the women enabled victories and valleys were overcome as the website developed into its final form (Jones & Wells, 2007).

Patience was an essential psychosocial attribute due to the time that was required to complete the diverse and novel nature of the work for the website. The task of creating a website placed the participants outside of their comfort zones; however, it satisfied their personal interest in lifelong learning and facilitated agency as they shared the products of their efforts among family, friends, and associates. Celebrating encompassed not only small victories throughout the process (e.g., finalizing messages), but also larger victories of completing both resources (e.g., sharing tea together).

In summary, partnerships are a long-term commitment to others and to achieving a goal. Over a period of time, victories will be won and valleys encountered. Establishing strong, trusting relationships that mutually benefit all partners and that carry the partners through challenging periods toward achieving the goal and vision of their work is an important strategy for managing the inevitable ebb and flow of activities in PP projects. Psychosocial valleys can be addressed through open and regular communication.

REFLECTING ON THE FINISHED BH4W RESOURCES: PRINT & WEBSITE

The Print Resource

During the private interviews, the group members expressed their satisfaction with the project resources by describing the print resource (Appendix 9) as *very well done* and *All the time and effort has produced a wonderful result.* We had met our conceptual priorities for the

resource by creating a colourful, eye-catching, accurate, and informative resource with a *good balance achieved* in the readability of messages for food, exercise, and supplement use along with a much regarded detachable shopping list of foods. Members were pleased with the graphic portraying a woman who *is strong and confident, is healthy and fit, has got everything she needs,* and *takes care of herself*, all qualities perceived as relevant to women in midlife. Collaborative efforts in minimizing details, maximizing usefulness, and working through wordsmithing challenges had produced a resource that the women felt stood apart from other resources by its colour, strong graphics, and use of non-medical, plain language. It was a tangible product that met their need for quick, simple, and easy to read, actionable bone health ideas that could fit into their lives.

Participants in the two focus groups provided general and specific like/dislike feedback. The following is a selection of their feedback on different elements:

<u>General</u>: Each participant said she would pick it up because it is appealing: it is "*colourful*" and "*grabs my attention*". *"It makes sense to me."* Also, they liked that it considered bone health in a holistic way.

<u>Messages</u>: They liked the question format of the title, "What have you done for your bones today?" *"It immediately got me thinking about what I had done today."* They suggested adding the term "weight-bearing activities" to the physical activity bullet on the back (done). They disliked the instruction "shake well before pouring" that followed the fortified beverages entry on the shopping lists (deleted).

<u>Graphics</u>: They liked the inclusion of supplement containers and running shoes on the back indicating a holistic approach to bone health, and they liked the image of a "*strong*" woman on the front. They also wanted the top button on her shirt closed (done).

<u>Layout</u>: They felt that the vertical layout on the front worked with the horizontal layout on the back.

<u>Design</u>: They liked the main colours, fonts and background (e.g., the starburst was uplifting, the dumbbell represented action), the title, and detachable

shopping list. They suggested changing the red background colour on the shopping list to a lighter colour for easier reading of the items on each shopping list (done) and suggested moving the URL for the website off the calcium shopping list to across the woman's thighs (done).

The Website

During the private interviews, two working group members described the website in the following ways, *It's looking polished and complete.* and *It's looking really good. It's a miracle!* This latter comment reflected the tremendous effort invested by the working group none of whom were computer savvy despite the group's commitment to developing a website, believing that it was an essential medium for reaching today's women. It is with this determination that the women worked through the slow process of website development with continued interest and commitment.

Formative feedback from the website focus groups produced mixed results: many participants liked the friendly tone and simplicity of the website, yet others preferred the greater amount of information found on the Osteoporosis Canada website; the narratives were valued by some but not others; many women preferred less text that showed the first few lines of each women's story followed by a *"read more…"* option; most women said the BH4W website was clearly organized, easy to navigate due to its simplicity, and offered practical ideas, however, adding more graphical features and using a variety of fonts would make it look less *like a high school project;* the tips and recipes for bone health were valued; and finally, a lack of technical and medical jargon was appreciated. One of the most salient comments (bolded text below) came from a focus group participant in pointing out the uniqueness of the BH4W website:

> *I think that it has a really good potential. It's just the matter, I think, of really defining it more for what it is, and really identifying, giving it an identity more. Because* ***it is more about bone health rather than osteoporosis,*** *and I think, you know, to really work with that.*

The BH4W website included a hyperlink to a short questionnaire for visitors to provide feedback on the website. Few users completed the questionnaire, however those that did responded in a favourable way (Appendix 17). Of the two bone health educational resources developed one has been locally distributed, and the other is available globally.

Lessons Learned: Resources

Producing useful outcome products was a primary motivator for members of the working group. An investment of time and effort was required at and away from the meetings to develop the two resources with the expectation that they would be of value to a broader community of midlife women. In addition to content, design elements impact on consumers' perceived credibility of the information (Marshall & Williams, 2006). Contracting the design elements to a graphic artist resulted in a final print resource that had a high level of appeal to the working group members and to people eternal to the group. On the other hand with the website, even though feedback on the content was favourable, feedback on the design elements was mixed. The difference in feedback across the two resources supports the notion that, when available, funds should be directed to appropriate specialists to achieve meeting the group-determined goals. When inadequate funds are foreseen, careful attention should be given to actively engaging all partners in sharing ideas to resolve budgetary challenges (Israel et al., 1998; Lantz, Israel, Schulz, & Reyes, 2006; Minkler, 2004).

An external evaluation of the resources can assess their usefulness to a broader audience. As yet, a thorough summative evaluation of both resources is still required. When using PR-informed processes to solve a local problem at a local level such as developing useful resources, it may be possible that the resources have potential use beyond the local community. While the initial overarching intention of the BH4W research was to determine if using a PP approach is an effective process for developing nutrition education resources that are valued by the stakeholders, the partners believed that the resources would be of value not only to themselves but also to other White, midlife middle-class women. The length of time that was required to complete the website and gather preliminary feedback on the website exhausted the limited budgetary resources available to the project; as such, a thorough

summative evaluation of both resources has not been conducted. Evaluation is an integral component of using a PP approach and with regard to the BH4W resources will be conducted in the future contingent on available funding. Relevant criteria that could be assessed for determining the effectiveness of the resources include: (1) the readability of the resources and the meaning midlife women obtain from the messages, (2) the meaningfulness of the resources to non-middle class, midlife White women, (3) how well the resources motivate midlife women to think about making changes to their diets, (4) actual dietary changes women make as a result of exposure to the resources, (5) how well the resources match the needs of practitioners, and (6) if women who are exposed to the resource(s) through consultations with a dietitian request further information or advice. Results from a summative type of evaluation will be able to determine if the resources meet the realities and needs of a larger number of the target audience and ultimately impact on their bone health-related behaviours. As well, an evaluation could determine the practice-based usefulness of the resources to nutrition educators.

In summary, resources developed by applying PR principles require commitment, time, and resources, and are executed by combining different types of expertise. Adequate budgets support the production of resources valued by intended users and completion of a summative larger scale evaluation. The feasibility of using a PR research-intensive approach to develop nutrition education resources in professional practice settings is unlikely due to the demands on resources. However, this finding does not suggest there is no value to practitioners engaging in inclusive processes and adopting key PR principles (e.g., co-education to achieve action, power sharing in making decisions) suitable to their practices in order to gain deeper insight into, and develop resources that match, the needs of the intended users of their services; thus, there may be a good fit between using PP as a PR-informed approach to transform current practice-based activities.

BROADER LEVEL LESSONS

In the following section, I have interpreted, extended, and considered the contribution of the BH4W project-specific lessons to theory and practice, primarily to inform resource

developers in other health disciplines. Recognizing that challenges will be encountered by fully applying a PR approach to resource development, the scant literature on PP led me to rely on the substantive body of literature on PR. These lessons may nonetheless contribute to broadening discussions and scope of thought among professionals who develop health education resources.

CONTRIBUTING TO THEORY AND PRACTICE THROUGH THE BH4W RESEARCH PROJECT

1. *Ensuring adequate time and resources for the PP process to fully unfold and the members to achieve their group-determined goals.*

From the onset of recruitment and continuing through to completion, taking a PR-informed approach to research places high demands on time and resources (Fisher & Ball, 2005; Lantz et al., 2006). Estimating adequate time and the resources required to complete the process is difficult to do regardless of the size and scope of a project. Furthermore, a sense of constrained time and resources can impact on group communication and actions. Group process theory and principles of PR suggest attention be given to operating from the outset with sufficient time and resources that support opportunities for the partners to grow in the roles they have undertaken and to successfully achieve the determined goals (Israel et al., 2006; Johnson & Johnson, 2003). Oftentimes, the resources of the partners themselves are key to success of the research (Titterton & Smart, 2008); however, external resources may be necessary to carry the project through to completion. Efforts to maximize group activities often rely on making continual judgments on time and resources: attention should be given to identifying measures that determine a successful use of time and resources in a project (Wallerstein, 2006). In the case of developing nutrition education resources, these measures may not only be observable changes in the participants' behaviours, but may also include how their experiences caused them to think about ways in which they could support their health and optimize the impact of their lifestyle choices on achieving a health-related goal (Buchanan, 2004). Ideas for addressing the issue of an

uncertain time frame may include discussing this issue during recruitment and setting schedules at the first meeting (Lasker & Weiss, 2003). Other possibilities for addressing the issue of budgetary resources may include seconding practitioners to research and offering all partners a realistic, rather than token, compensation (Israel et al., 1998).

2. *Building and sustaining strength in new partnerships.*

As realized in the BH4W project and in many PR studies (Barnes, 2000; Israel et al., 2006), strong, synergistic partnerships are essential to carry the participants through cycles of heavy and light workloads, urgent and non-pressing communications, and feelings of uncertainty and success (Lasker et al., 2001). Wallerstein and colleagues (2005) have shed light on the critical importance of establishing convivial working relationships. Becker et al. (2005), Christopher, Watts, McCormick, & Young (2007), Weiss, Anderson, & Lasker (2002) and others have drawn attention to creating an open communicative space, building and maintaining trust among partners, reacting respectfully to a diversity of input, and distributing power and control as reinforcing, interrelational constructs in models of healthy partnerships.

3. *Embracing ethical operating norms.*

One of the benefits of using a PP approach is access to the minds of a diversity of partners over a period of time. While being considered a benefit, diversity can also present ethical challenges (Becker et al., 2005): partners have different skills, different knowledge, and different life experiences, they learn differently, use different language, share their knowledge differently, and have different needs (Minkler, 2004). Exploring these differences can challenge stereotypes, assumptions, and misperceptions (Israel et al., 2008); however, by recognizing and respectfully accommodating multiple characteristics that are inherent in the group members, these types of ethical issues can be addressed in collaborative research. Reciprocity, respectful dialogue, taking time to hear different perspectives, and drawing out the essence of a common understanding are all strategies that encourage and manage

diversity among group partners (Jewkes & Murcott, 1998; Minkler, 2004; Postma, 2008).

4. *Finding an overall balance between 'task' and 'process' orientations in the working group members.*

The aversion of potential tension that can arise from partners who are oriented to different task or process activities may be achieved by overtly recognizing a synergism between the orientations (Lasker et al., 2001). Partners may periodically remind the group of a need to consider both orientations in their work. Kemmis & McTaggart (2000) have identified strategies that help to bring working with different orientations into greater balance: regular reflections on group process; an evolving list of tasks that need to be, and have been, completed; and, consensus on ways to complete the tasks. The development of project-specific strategies to reduce potential conflicts adds a critical dimension to PR-informed studies (Wallerstein & Duran, 2008).

5. *Sharing experiences of engaging in a PP project.*

As partners acquire new knowledge and skills through co-learning, co-educating, and capacity building activities, the sharing and translating of these recent acquisitions to a broader community represents action, a key element of PP. Reflexive praxis that yields sharing new knowledge with others through formal or informal channels of dissemination (e.g., community meetings, academic conferences, professional development workshops) may potentially lead to changes in lay people's behaviours, academic research protocols, and professional practice and policies (Israel et al., 2008). The human capital gained through sharing new knowledge may provide strong motivation for behaviour change (Bolton, 2005; Coleman, 1988).

6. *Engaging in action-oriented collaborative research.*

It is well acknowledged that theory, research, and practice are inextricably linked (Contento, 2007; Glanz & Rimer, 2008; Glanz, Rimer, & Viswanath, 2008). Health practitioners have a critical role to play in advancing best practices in their respective

disciplines and academic researchers have an equally critical role to play in conducting ethically responsible studies that advance knowledge of theories that can consequently impact on practice. Practitioners who engage in authentic collaborative research with other health practitioners, academics, and users of their services can help to solve 'real world' issues, and in the process gain new knowledge. Although it is common for practitioners to gain new knowledge through other avenues such as reading journal articles, attending conferences, and taking courses, those who are interested in participating in research may be able to implement their new knowledge into practice more readily as a result of their first-hand experiences. The versatility of new knowledge may not only apply to the issue being researched but may also be incorporated into other professional development opportunities that can advance everyday professional practice. As I have noted throughout this chapter, it is contestable to take a stance of dietitians using a PR approach in practice-based settings due to restrictions common to system worlds (e.g., resources, time, personnel); however, the lessons exposed from this study have been a product of the participation of a few practitioners. It is through the engagement of these few nutrition educators that other practitioners can gain insight into determining the applicability of this type of research in their practices. Without dietitians participating in research, the opportunities for shortening the nutrition-related research-to-practice axis are limited (Green, 2008).

7. *Learning lessons by participating in action-oriented collaborative research.*
Evidence shows honest dialogue and attentive listening to service users' 'inside' accounts of factors that impact on their health can enrich practitioners' understandings of the facilitators and barriers in people achieving their goals (Cargo & Mercer, 2008). This insight can draw practitioners' attention to their clients' knowledge base, which in turn, can provide a better understanding of their health education needs. Practitioners who learn and engage in a synergistic way with users of their services may be better equipped to balance factual details with practical and

useful information in the content of resources they develop (O'Fallon, Tyson, & Dearry, 2000).

8. *Applying lessons from action-oriented collaborative research.*
Often practitioners are challenged in keeping practice-based technical jargon out of educational resources, determining the level of detail in the information provided, and producing resources that ring true to the needs of a particular segment of the population. Taking the lessons learned from a collaborative educative process and applying them to resource development processes can resolve challenges that are encountered in conventional practices, for example, using language and content that matches the level of understanding and needs of the intended users (Horowitz, et al., 2009b).

The project-specific and broader lessons that I have presented in this chapter come from my reflective and critical analysis of the small-scale BH4W project. When applicable, I have discussed the lessons in the context of Cargo and Mercer's (2008) Integrative Practice Framework for Participatory Research (IPFPR). While the lessons learned have not been developed into their own theoretical framework for applying a PP approach to small scale resource development projects, they do offer insight into the pitfalls and rewards of adopting participatory principles into specialty areas of practice. As the lessons of this critique highlight, the application of a research-intensive PR approach in practice-based settings faces many challenges; therefore, it may be more reasonable to shift the research emphasis from developing theory to selectively adopting PR principles that will lead to improving practice-based activities. In addition, the lessons learned from this qualitative case study are not presented as possible ingredients in a 'recipe' for successful small-scale PP projects, rather they are presented as stimulus for discourse among resource developers when considering key issues that can emerge out of conducting collaborative research on a small scale.

Many of the highlighted issues in the lessons learned affirm findings reported in reviews of PR projects (Cargo & Mercer, 2008; Israel et al., 1998). What is distinctive about the BH4W study is the application of PR principles in resource development in conjunction with

the small scale, the nutrition education focus, the research question arising out of common practice-based activities, and the applicability of the findings to the localized context of resource development. These common and unique characteristics and the lessons drawn from nutrition educators working with community members and academic researchers offer insight into ways to think about incorporating participatory principles into practice-based resource development projects. Offering improved training opportunities for academic researchers, health professionals, administrative officers, and community members; securing adequate funding for partner affiliations; and, upstream recognition by administrators and policy decision-makers of the value in new knowledge gained, shared, and used through a process of mutual collaboration, dialogue, co-education, research, and action may contribute to transforming practice-based activities that benefit health service providers and users alike.

LIMITATIONS

While the stakeholders derived value from working together to develop the two nutrition education resources, the transferability of value must be weighed against limitations of the study. To begin, although nuances and subtleties of this group were aptly recognized throughout the project, this was a small study of midlife women with relatively homogenous demographic profiles that most likely facilitated the internal functioning of the group and consequently the findings. Given that the partners were middle-class, White women the usefulness of the resources to other midlife women may be limited.

Another drawback was my inexperience as an academic practitioner of PR-informed processes. In my approach to managing an anticipated tension between a perceived need to provide leadership in the group and a need for the group to be self-determined and take ownership of all aspects of their activities, I stepped back from directing, although I actively participated in, discussions and exerting academic influence on the process. Upon reflection, I realize that in taking this approach I had de-valued some of my own expertise, and, from an analytical perspective paradoxically revealed critical underlying issues in participatory inquiry processes including power differentials, opening communicative space, and human agency. Furthermore, taking this approach may have added inefficiencies to the group: despite this,

each woman in the group was committed to and capable of advancing the tasks that needed be performed while maintaining normative group processes.

A third limitation relates to reporting the details of the process used in this case study: an all-encompassing account of the process was not possible. Although I have attempted to present judicious and sufficient relevant detail for readers to consider possible implications of this type of work in their own practice, the findings are open to readers' judgments based on the details provided and to their own sense of the usefulness of the findings to their situations.

A fourth limitation was working with limited resources. PP is time intensive and due to its long-term, evolving nature, costs were incurred that had not been previously considered: for example, the use of in-person focus groups to provide feedback rather than relying on a website questionnaire. The longer the duration of a project, the more resources will be required to keep the participants motivated and fully engaged in developing meaningful resources. Measures should be taken to ensure adequate funding for all phases of each project.

And finally, the effect of limited resources prevented a formal evaluation of the resources. The BH4W project was not designed as an intervention study, but as an exploratory case study. Although an exploratory design does not preclude an evaluation component, and despite conducting two small focus groups for the print resource and two for the website, a formal evaluation that is designed to incorporate cognitive, behavioural, and affective outcome measures is still required. This type of evaluation will determine if the resources meet the needs of women beyond those in the partnership, and produce cognitive and behavioural outcomes.

IMPLICATIONS FOR PRACTICE

Working among a diversity of partners who are affected by an issue such that power is democratized and there is a greater interplay between systems worlds and lifeworlds may be a "*new*" approach for nutritionists to consider when generating resources that people use in their daily lives. Reframing professional practice to incorporate a modified version of this type

of collaborative approach will face challenges. However, the lessons learned from this study may stimulate discussions among, and perhaps the creation of a new practice-based research network of, nutrition educators. A clear analysis of what it takes to optimize the bridging of different forms of lay and professional knowledge to generate effective outcomes in nutrition education is still required. Framing resource development in the light of PP can provide nutrition educators with a deeper understanding of the issues involved in women aiming for sustainable dietary behaviours that close the gap with current dietary advice. Notwithstanding a potential for reframing practice in the area of resource development, this area represents one component of nutrition education, which itself is only one of many determinants of dietary behaviours. Through advances made in the field of resource development, nutrition educators may benefit from working closely with the intended users of their services in other areas of their practice.

CONCLUSIONS

In this chapter, the BH4W project has been presented as the second phase of a qualitative case study for determining the feasibility of applying a PP approach to developing nutrition education resources. The analysis offers insights for nutrition and other health educators who may consider changing their paradigm of practice for developing educational resources from a more or less exclusive process to a more inclusive and democratic process (Buchanan, 1996; Ndirangu, Yadrick, Bogle, & Graham-Kresge, 2008). A key role of nutrition educators is to translate research findings into practice-based actions. Nutrition professionals who engage in research processes may decrease the usual time lag between conducting research and utilizing the findings, thereby shortening the research-to-practice axis in their own practice.

In regard to answering the research question specific to investigating the process aspects of the BH4W project—*What are the process-related tangible and intangible benefits, challenges, and facilitators associated with using a participatory practice (PP) approach to develop nutrition education resources?*—this research highlighted salient facilitating factors, benefits, challenges, and potential solutions in initiating, planning, implementing, sustaining,

and critically assessing both project tasks and processes associated with print and website resource development. The following contributed to lessons taken from examining this small-scale PP project: facilitating factors included the functional characteristics of the partners and adhering to good group process; benefits included the dietitians gaining a more nuanced understanding of lay women's needs for education associated with bone health and food choice and lay women enhancing their knowledge of bone health through direct and sustained access to nutrition professionals; challenges included sustaining the partnership through periods of high and low activity and facilitating different orientations of interest in achieving the group's goal; and, solutions to the challenges—adding to the above facilitating factors—included using a reflexive process to enhance the working relationships along with the work that was being accomplished and regular electronic communications during lulls in activity. The resources that were developed met the needs of the professionals and the community women and are available at, or in use in, community (libraries, community centres, gyms) and clinical settings (health clinics, health services) suggesting a speculative value of the tangible outcomes from the BH4W project to the broader community. Table 3.2 provides a summary of the key benefits and challenges that arose from using a PP approach in the BH4W project.

The adoption of PP principles offers an opportunity for health educators to consider re-visioning their resource development process. Support for health professionals who are considering this pathway is critical. Health professional organizations including Dietitians of Canada (DC) and the American Dietetic Association (ADA) have position papers encouraging their members to "support research, health promotion activities, health care services, and advocacy efforts to enable women to adopt desirable nutrition practices for optimal health" (ADA & DC, 1999; ADA & DC, 2004, p. 984). Not only is support from professional organizations critical, so is support from workplace administrative units. However, this type of support will require educating, and providing evidence to, administrators on the value of using PP principles in developing practice-based evidence for resource development. Health educators who undertake the opportunity to apply a PP approach will be immersed in a rich educational experience with potential for long-term effects in their professional practice.

Table 3.2. Key Benefits and Challenges in Using a Participatory Practice Approach to Develop the BH4W Nutrition Education Resources

Key Benefits and Challenges in Using a Participatory Practice Approach to Develop the BH4W Nutrition Education Resources
Key Benefits
Recruiting: Opportunity to work with professional peers and non-professionals   Opportunity to link research to practice-based issues   Knowing key characteristics of the stakeholders
Working: Small scale facilitated easy dialogue   Adopting group process norms to establish and maintain healthy working relationships   Working in an open communicative space fostered a sense of social connectedness among the partners   Obtaining personal and professional value in understanding individual partners' knowledge expertise   Democratizing power and control among the partners through co-education and co-learning exchanges and a distributed-actions leadership style   Gaining human capital through the partners' actions that were internal and external to the group   Producing tangible resources that were valued by the partners and used in their professional work and personal lives   Linking intangible outcomes with professional practice
Wrapping it up: Collecting data in exit interviews by an engaged partner

Key Benefits and Challenges in Using a Participatory Practice Approach to Develop the BH4W Nutrition Education Resources
Key Challenges

Recruiting:
 	
    Unknown time frame and uncertain workload—allow sufficient time for prospective partners to decide whether to participate or not
 	
    Engaging people with diverse opinions

Working:
 	
    Accomplishing the work without a methodological blueprint
 	
    Engaging partners in the academic aspects of the project
 	
    Using data collection methods that were not acceptable to the group
 	
    Managing different orientations among group members to reduce potential tension
 	
    Completing research activities on a limited budget
 	
    Managing differences in knowledge—allowing the penetration of system worlds thinking into lifeworlds thinking, and vice versa
 	
    Scheduling meetings
 	
    Managing perceived time pressures and lulls in activity
 	
    Adapting to the strategic change from meeting face-to-face to online communication
 	
    Obtaining technical support for developing the website

Wrapping it up:
 	
    Collecting data in exit interviews by a participating partner
 	
    Running out of funds to complete a formal evaluation of the resources

In building on this study, a critical analysis of future studies that use a PP approach with different groups of stakeholders (e.g., men, young women) and different topics could be compared and contrasted to the findings from this study to better determine the utility of this approach in informing practice-based activities. Future research may reinforce or contest some of lessons learned in the BH4W project but may also extend the current understanding of how to meet people's needs in educational resources.

In summary, small-scale case study projects provide an opportunity to explore the values, benefits, and challenges derived from bringing together a diversity of people who are interested in and affected by an issue. Although the issue may affect everyone (e.g., bone health), a localized application of PP can highlight the visions, victories, and valleys of engaging in collaborative research for informing professional practice. The value of piloting this type of research will be recognized when health professionals engage in critical dialogue regarding its potential impact on practice-based activities.

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Chapter 4[4]

Communicating, Learning, and Acting: Midlife Women's Experiences of Engaging in a Small-scale Participatory Practice Project to Develop Educational Resources for Bone Health

INTRODUCTION

The enduring gap between the dietary guidelines of Health Canada and dietary behaviours of the Canadian population challenges researchers to examine current practices that aim to narrow this gap. Despite the best efforts of nutrition educators, the success of nutrition education has been limited (Nestle et al., 1998; Orleans, 2000), often producing positive short-term behavioural effects (Contento, 2007; Research Triangle Institute et al., 2001) while sustained behaviour changes have been more difficult to achieve (Travers, 1997). It is well acknowledged that nutrition behaviours are complex and impacted by intrapersonal, interpersonal, and broader environmental factors (Contento, 2007; Devine, Conners, Bisogni, & Sobal, 1998), thus making sustained dietary behaviour change challenging to achieve. However, when nutrition education efforts produce less than desirable behavioural outcomes, opportunities arise for investigating different aspects of educational practice (Achterberg & Miller, 2004). One key aspect to examine is the process used to develop dietary guidance resources (Contento, 2007). The quality of resources used by nutrition educators is crucial to providing people with appropriate food choice guidance, which in turn may give rise to desirable dietary behaviours.

Despite limited evidence for success, nutrition education remains an important tool for practitioners and service users alike to potentiate possible changes in cognitive and affective behaviours (Contento, 2007). Prominent communication and message theories (Finnegan &

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Viswanath, 2008; Hornik, 2002; Wilson, 2007), behaviour change theories (Janz & Becker, 1984; Montano & Kasprzyk, 2008; Prochaska, Redding, & Evers, 2008), and education and learning theories (Bandura, 2004) emphasize the importance of gaining a deep understanding of the target audience. Gathering and using this key information can not only direct decisions on the processes used for developing dietary guidance tools, but can also affect the quality of tools produced (Horowitz, Robinson, & Seifer, 2009). Although it is not uncommon to obtain input from the intended user during development of a resource—for example, perspectives captured in a needs assessment or a formative evaluation—modifying common data collection methods that are centered on a dichotomous 'professional' and 'lay' or 'researcher' and 'researched' approach (Gaventa & Horton, 1981) to more inclusive ways of blending knowledge sets, skills, and other attributes of a diverse group of affected people may lead to asking more informed questions and obtaining more comprehensive answers (Fawcett et al., 2000). On the other hand, balancing issues of power and influence among a diverse group of partners can prove challenging to manage (Gaventa & Cornwall, 2006), and may even thwart the success of some collaborative projects (Chung & Lounsbury, 2006). Social, cultural, economic, and educational differentials will exist in a diverse group; however, by working in an open, supportive, and respectful communicative space and adhering to common norms of good group process, tensions that are generated by these differentials may be effectively resolved (Israel et al., 2008). Strong formative research can offer ideas for meeting the challenges of power and control as encountered in inclusive processes and in this way can contribute to the theoretical underpinnings of nutrition education practice.

Communities are pushing for research to be more sensitive to their needs (Green & Mercer, 2001). Practices used for resource development that foster a fully engaged collaborative partnership between health researchers, nutrition educators, and affected members of the public may reduce the 'objective' distance between researchers and research participants—a space between achieving academic objectives and meeting a community's "felt needs"—that can be vast at times (Horowitz, Brenner, Lachapelle, Amara, & Arniella, 2009; Park, 1999, p. 143). Drawing on the partners' span of 'local' and 'expert' knowledge, skills, theories, and other attributes can drive an open, sincere, and deep exchange of

information (Trickett & Espino, 2004) that in turn can create a new form of knowledge from the existing knowledge bases to enhance our understanding of the phenomenon of interest (Park, 1999). Issues encountered in collaborative partnerships such as those of space, power, and human agency, will require attention (Cahill, 2007). However, an open communicative space that supports the democratization of power—for example by alternating educator/learner roles among the lay and professional partners—may reveal new reasons for the existing dietary guidance-behaviour gap as well as new ways to address the gap, new processes for applying a blend of different types of knowledge to professional and personal practices, and new opportunities for the professional development of nutrition educators, among other benefits. When engaging in meaningful and sustained exchanges of ideas, nutrition educators will be forced to reflect on the practical implications of overcoming what Habermas referred to as a de-coupling of system worlds and lifeworlds (Habermas, 1987; Kemmis, 2001). System worlds are fully rationalized on the basis of efficiency, calculability, predictability, and control (Frank, 2000). People who are involved in systems worlds are directed by rationalizations of the system. Daily practice that is confined by system norms of professional conduct and institutional constraint is often disconnected from people's lifeworlds—defined by Habermas as "a community's shared common understanding of 'who we are' and 'who we value being'" (as cited in Wicks & Reason, 2009, p. 245). Just as engaging in sustained dialogue with lay people offers health professionals an opportunity to re-couple Habermas' two worlds, lay community partners may find a place of influence for their voices and values in the dietitians' systems worlds. Using a participatory practice (PP) orientation to developing nutrition education resources offers the 'researcher' and the 'researched' or 'professional' and 'lay' an opportunity to re-couple these two worlds by sharing power while engaging in close and sustained collaborative activities in the course of working toward a common goal (Gaventa & Horton, 1981). The experiences of partners who engage in these activities can provide insight into the benefits and challenges of using a PP approach to develop nutrition education resources and how these experiences can potentially impact practice.

PP can be described as a methodology having common core values and guiding principles with participatory research (PR); however, it can be conceptually distinguished from PR by its focus on answering practice-derived, context-driven research questions that aim to advance critical thought on small-scale, practice-based activities. The literature typifying PP as a methodology is scant, thus making the use of PR literature essential for developing the concept of PP and critiquing its application as a methodology (Ledwith & Springett, 2010).

PR has been described by Green et al. (1995, p. 4) as "systematic inquiry, with the collaboration of those affected by the issue being studied, for purposes of education and taking action or effecting change". The increasing popularity of using PR as an orientation to health research rests in its suitability for researching complex issues—for example, improving dietary and lifestyle choices—wherein the reciprocal exchange of different types of knowledge and negotiation of blended new forms of understanding can afford a greater chance for meaningful human agency, be this on an individual, group, or wider level of action (Pettit, 2006). When applied to nutrition education, a goal of human agency is that it manifest in ways to advance the adoption of sustainable and salutogenic dietary behaviours (Israel et al., 2005a; Kindon, Pain, & Kesby, 2007; Minkler, Vásquez, Tajik, & Petersen, 2008). The concept of salutogenesis, first introduced by Aaron Antonovsky in the 1980's, refers to people's ability to focus on creating health, rather than focus on risk of ill health and "dis-ease" (Lindström & Eriksson, 2005, p. 440). This concept fits well with the importance Canadians give to healthy aging and goals of nutrition education (Federal/ Provincial/ Territorial Committee of Officials (Seniors), Healthy Aging and Wellness Working Group, 2006). Brug, Oenema, & Ferreira (2005), among others (Oenema, Tan, & Brug, 2005), contend nutrition education is only as effective as it is motivating and meaningful to the intended recipients. It is therefore reasonable to argue that using a PP approach to engage members of the target audience from beginning to end may improve practices that aim to support a focus on health and to possibly have a positive effect on closing the existing gap between dietary guidance and practice (Contento, 2007).

While the PR literature in health research indicates the integration of different subjectivities and shifting positions of power can be viewed as both benefits and challenges,

nutrition educators who attempt to adapt normative practices of resource development that generally lie squarely in their hands to more inclusive processes can expect disruptions to their usual patterns of thinking and hierarchies of knowledge production (Cahill, 2007; Kindon et al., 2007). Despite facing challenges with issues of power and control, nutrition educators may otherwise view the process of garnering an in-depth understanding of the target audience as a valuable educational lesson not only with regard to resource development, but also with regard to other aspects of their professional practice. For example, in dietary counselling, nutrition educators make inquires into their clients' social interactions, ability to comprehend ideas, and potential to act. With these practice-based considerations in mind, a parallel can be drawn between inquiries made in nutrition education practice and three key dimensions associated with PR and other closely related approaches to research (e.g., PP)—research, education, and action. Nutrition educators who are looking to explore a new paradigm of using collaborative processes should be aware of the potential utility of this conceptual, yet parallel, framework. PR and PP set a broad scope of potential effects that include a deeper understanding of the wants and needs of people affected by an issue, the complexities of clearly communicating reliable and meaningful nutrition information, and the research process (Israel et al., 1998; Ledwith & Springett, 2010). Working in ways that change a paradigm of power from "power over" to power sharing (Gaventa & Cornwall, 2006, p. 123) may effectively resolve power and control related tensions while attempting to bridge systems worlds and lifeworlds and shorten the distance between dietary theory, practice, and behaviour.

Despite a good fit between PP and the process and outcome goals of resource development, to date few reports of applying a community-based, participatory inquiry approach to developing nutrition education resources exist. There is one example of successfully using a community organization approach to planning a senior's nutrition education program (Hedley, Keller, Vanderkooy, & Kirkpatrick, 2002). Despite a limited body of research in this area, drawing on lessons learned from the experiences of participants involved in using a PP approach to resource development may contribute to not only practice-based issues, but also to a greater understanding of theoretical issues. As noted above, two

prominent issues found in bringing a diversity of stakeholders into a collaborative partnership include managing power differentials among the partners and identifying actions taken by partners that help to diffuse the boundary between lifeworlds and systems worlds. Other more practical insights may also be realized such as the feasibility of applying this research process in professional practice; identifying personal and professional values derived from participating in this type of research; creating novel ideas that help to bridge the gap between dietary guidance tools and dietary behaviours; and, generating ideas for new professional development opportunities for nutrition educators.

Elsewhere[5], I have presented the theoretical and practical lessons learned from the *process* aspect of a demonstration research project, *Bone Health for Women* (BH4W). This project used a PP approach in developing nutrition education resources that aim to encourage midlife women to adopt behaviours considered as beneficial to bone health. The overarching research objective was to determine if using a PP approach could be an effective process for developing nutrition education resources that were valued by the research partners; however, in this chapter I address the specific research purpose of examining the *experiential* aspects of participating in this study. In regard to learning from this aspect of the project, the research question asked: *What are the experiences of the stakeholders engaging in participatory practice (PP) and how do these experiences affect personal and professional practices?* The primary purpose of answering this research question was to provide nutrition educators with an understanding of the meanings stakeholders ascribed to their participation and the ways in which power differentials and the bridging of lifeworlds and systems worlds were experienced by the partners. It is my intention to provide sufficient detail for the reader to gain a practical understanding of the benefits and challenges encountered in using a PR-informed process for resource development from an experiential perspective. It is through the lens of being an academic researcher with an interest in collaborative research and the practical utility of PR-informed approaches, a dietitian with an interest in nutrition education and bone health, and a midlife woman that I use the PP core values of research, education, and action as an

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[5] Chapter 3 of this dissertation presents lessons learned from a critique of the *process* of using a PP approach in the BH4W research project.

underlying conceptual framework in presenting this critique of the communicating, learning, and acting experiences of the BH4W partners.

METHODS

Overview of the BH4W Project

As previously noted in Chapter 3, motivation for the BH4W project was grounded in incorporating the first-hand voices, realities, expertise, and experiences of midlife women (40 to 55 years) engaged in a process of developing peer-targeted nutrition education resources specifically for bone health. The BH4W project was the second phase of a larger qualitative case study and was preceded in Phase I by an exploratory focus group study that had an overall purpose of understanding the context of how midlife women situate bone health in their food choice strategies (see Chapter 2). The knowledge gained from the six focus groups was discussed among and incorporated into background material provided to the partners participating in the BH4W project. The project had an overall purpose of determining the feasibility of using a PP approach to develop bone health-related nutrition education resources by and for midlife women with diverse backgrounds (e.g., lay community women and nutrition professionals). Eight midlife (40 to 55 years), middle-class, White women—three community women, three practicing dietitians, an academic research assistant (a former dietitian), and myself (doctoral student and dietitian)—all with an interest in bone health participated as partners over a period of 28 months in the BH4W project. The face-to-face meetings spanned four months, the electronic phase spanned 20 months, and conducting the website focus groups and private exit interviews with the partners took four months. In addition, recruiting partners into the BH4W project took approximately three months.

Recruiting the Study Participants

Recruitment of the community women and the dietitians was achieved through social and professional networking, respectively. The community partners were recruited using a snowball technique, and the dietitian partners were purposively recruited from different areas

of nutrition education practice—clinical, community, and consumer. Word of mouth recruitment for midlife community women at a private gym led to one of the clients—a participant from Phase I with an interest in the participatory process and in bone health, offering to put out a request through her social networks for women to participate in the study. Two other community women with flexible schedules and diverse opinions were willing to participate. In recruiting the dietitians, knowledge of sites where nutritionists developed nutrition education resources in different areas of practice was critical to maximize the potential usefulness of the resources across practice areas. One clinical dietitian who worked in the area of osteoporosis was invited to participate and she agreed. She suggested the name of another dietitian who worked in tele-health services and one in the clinical practice area of cancer. When contacted, the dietitian at the provincial tele-health service agreed to participate, however, the cancer centre dietitian declined participation due to feeling over subscribed in her existing commitments. In considering the importance of partnering with dietitians from multiple practice areas, contact was made with a dietitian who worked in a supermarket setting and developed consumer education materials. Health problems precluded her from taking on more commitments, however, she recommended her colleague who agreed to participate. The research assistant had prior experience as an outpatient dietitian and I had ten years prior experience as a community nutrition educator.

Exploring Women's Experiences of Participating in the BH4W Project: Gathering the Data

In my role as academic researcher (AR), I was interested in discovering the partners' experiential perceptions of participating in the BH4W project. To discover these perceptions I conducted and audiotaped in-depth, semi-structured, private, exit interviews with each community woman and dietitian at the completion of their involvement in the BH4W project. The exit interviews ranged between 50 and 90 minutes. This type of interview is considered appropriate for a project like BH4W because it can reveal insight into personal and more private reasons for *why* each woman engaged as she did in the project as well as in her social world (e.g., sharing the resources) (Israel, Lantz, McGranaghan, Kerr, & Guzman, 2005b). Development of the exit interview guide (Figure 4.1) was based on my review of common

BH4W — Final Individual Interview Questions

The purpose of this semi-structured interview is to elicit your rich reflections – on both individualized experiences and group process components of the BH4W project – to inform future small-scale, community–based research projects.

❑ If you were to describe the process we were all engaged in to your friends or family, how would you describe it?

❑ How do you feel the group worked as a whole?

❑ In what ways do you feel you have contributed to the project?

❑ How did it feel for you to be engaged in this working group?

❑ Did you feel your point of view was adequately valued in the process of meeting our goal to generate reliable nutrition education resources?

❑ What could the group have done better to more closely reflect your ideas?

❑ How do you feel about *the process* we used to develop our nutrition education resources? Was there any part of the process that you thought worked particularly well? Not so well?

❑ What kept you committed to the working group process?

❑ What motivated you to complete this process?

❑ How valuable did you find this process? If valuable, in what ways did you find value in participating in this project?

❑ Did you feel you were adequately prepared for your participation?

❑ Do you think any of your friends would participate in a similar project? Briefly, why or why not? OR…Would you recommend participation in a similar process to any of your friends?

❑ Has this process helped you grow in any way? If so, in what way and how?

❑ What was most satisfying about your participation in this process? What was least satisfying?

Questions asked of the nutrition professionals only

❑ Did participating in this process change your perceptions of working with community women? If so, how? If not, please elaborate.

❑ How did you feel about working as a peer collaborator with "non-nutrition experts" (community women) in this project?

❑ Do you think you will find either the print or website resource a valuable tool in your work? If so, how? If not, please elaborate.

Questions asked of the community women only

❑ Did participating in this process change your perceptions of dietitians? If so, how? If not, how do you perceive dietitians?

❑ How did you feel about working as a peer collaborator with "nutrition experts" in this project?

❑ Will you share either the print or website resource with your family or friends? Do you think either will be of interest to them?

Everyone

❑ After participating in this project, what do you perceive are barriers to collaboration among combining public and professional group members while working toward completion of a resource? What are realistic and practical alternatives?

❑ Do you have any other comments or thoughts you would like to share?

Discussion of workplace approach to resource development.

If possible, could we please add on a short discussion about the process used by the [name of program] to develop educational resources? Below are a few general questions, some or none of which may apply to your resource development process.

Do you conduct needs assessments? If so, how do you conduct them? If not, why not?

Do you have formative and/or summative evaluation procedures? If so, how do you conduct them? If not, why not?

When developing resources what is done in-house and what is out-sourced? How are these decisions made?

Figure 4.1. BH4W Participant Exit Interview Guide

challenges and benefits identified in the PR literature, my past academic training and experience as a qualitative interviewer, and practical experiences encountered while participating in the BH4W project. Initially, the questions focused on perceptions at a broader environmental level of activity (e.g., *How do you feel the group worked as a whole?*), followed by questions focused on the interpersonal level of activity (e.g., *Did you feel your point of view was adequately valued in the process of meeting our goal to generate reliable nutrition education resources? Can you expand on that?*), and finally on the intrapersonal level of inquiry (e.g., *What kept you committed to the working group process?*). The interview guide was pre-tested with one community partner, and required minor modifications (a rearrangement of questions). These data were included in the analysis. Five face-to-face interviews were conducted and one phone interview with a dietitian (her other commitments precluded a face-to-face interview). During each interview member checks were used to improve the credibility of the research data (e.g., *What I hear you saying is you would have liked more structure in the process, 'more crack the whip'. Is that correct?*) (Lincoln & Guba, 1985). Due to the relationships that I built with the other partners during the BH4W project and my role as interviewer for the semi-structured exit interviews, questions may be raised regarding the objectivity of the data collected during the interviews. Although a third party interviewer may have elicited more objective responses, it is also possible that the women may not have described their experiences as fully with someone they did not know, given the importance of our communication actions in the experiences of the members in the BH4W project. Furthermore, as part of my subjectivist epistemological stance of being an engaged researcher, using an external interviewer would have compromised my stance in regard to collecting data. As a partner and the interviewer, I had gained the trust of the women that an external interviewer would need to establish, which leads me to believe that the partners responded to the questions as openly as they may have with an independent interviewer.

Although the interview tapes and transcripts were the primary data set for this study, these data were also complemented with verified verbatim transcripts of the working group meetings and research team debriefings, participant observation, participant's personal journals, email correspondence, meeting minutes, and field notes. The importance of using

data triangulation is that it allows for reflexive corroboration of findings across different methods of data collection to enhance the quality and authenticity of the interpretive findings (Farmer, Robinson, Elliott, & Eyles, 2006; Sandelowski, 1995). Approval for the research was granted from the University of British Columbia Behavioural Research Ethics Board (Appendix 4) and the Canadian Foundation for Dietetic Research provided funding for the study (Appendix 5).

Exploring Women's Experiences of Participating in the BH4W Project: Analyzing the Data

In my role as academic researcher, I conducted thematic analysis of the participants' experiences using an inductive and iterative process. I started with open coding of the original documents and then moved between the coded segments to generate summary sheets containing codes, common words, phrases, and original quotes that ensured preservation of participants' perspectives (Creswell, 2007). Text segments were clustered, compared, and contrasted for relationships to generate the three abstracted interpretive themes: communicating, learning, and acting (Richards & Morse, 2007). The abstracted themes paralleled the three key dimensions found in the PR framework—research, education and action (Hall, 1992; Minkler, 2000). Credibility of the findings was enhanced by prolonged engagement among the participants, member checks during meetings and interviews, debriefings among the academic research team, consultations with members of my supervisory committee, audit trails, and data triangulation (Lincoln & Guba, 1986; Sandelowski, 1995).

While the production of these themes is drawn from my reflexive analysis of the data, Gilgun (2005) argues that representations in writing should be appropriately viewed as co-constructions of the interactions between the participants, "between researchers and [the] researched." Thus, in attempting to analyze the shared frame of reference of women in the BH4W project, the three themes that I generated are representations of the activities in the project and are filtered through my lens of being a dietitian and midlife woman, in addition to my role as academic researcher. Through analysis, the partners' actions revealed multiple realities that were incorporated into the discussions and consequently into how power

differentials and the bridging of lifeworlds and systems worlds were experienced (Horiuchi, 2004). At the exit interview, the women reflected on their explicit and otherwise tacit experiences in the PR process (Barrett & Taylor, 2002; Taylor, Deak, Pettit, & Vogel, 2006). All of these data sources were used in my analysis.

FINDINGS

An overarching feeling of connectedness in the three crosscutting themes—communicating, learning, and acting—wove through the women's experiences in the BH4W project. As commitment to each other and to the project solidified, the community members gained personally by learning about bone health, the dietitians gained professionally by better understanding the needs of the community partners, and the academic research team gained analytically by applying a PP approach to the practice area of resource development. The details of each theme will be described in terms of dimensions (Table 4.1) that were unique to each theme in conjunction with evidence for larger conceptual issues of space, power, and human agency that were common across all three themes.

Table 4.1.   Phase II – BH4W Experiential Themes and Dimensions

Theme	Dimensions
Communicating	1. Building mutual trust and respect among the partners
	2. Valuing the use of plain language to facilitate open communication
Learning	1. Gaining personal and professional benefits from socially constructing new knowledge and understanding
	2. Bridging different types of knowledge to generate new understandings that have real-world application
Acting	1. Committing to group actions that would produce resources useful to professional and personal practices
	2. Using newly acquired knowledge in actions that were internal and external to the group

Two distinct perspectives emerged within the group: the non-academic participants centered their focus on completing the tasks required to produce the project resources, whereas my primary focus as academic researcher centered on learning from the unfolding process used to produce the resources. These distinctive, but not mutually exclusive, foci complemented each other throughout the partners' experiences and strengthened the partnership. The women considered their efforts to be successful in terms of incorporating a sensible mix of evidence-based and local content into the two resources and ensuring that resources were unique and useful to members in their respective communities.

The three emergent themes were also not mutually exclusive as the women attentively listened and responded to a continuous challenge of misperceptions, preconceptions, opinions, information, and arguments from which new understandings were formed and actions were taken that resulted in production of the two resources. Participant agency outside the group manifested in transferring knowledge to family, friends, and peers. Although these actions indicate an outcome effect of the process, the findings presented in this chapter are centered on activities internal to the BH4W project with occasional reference to external knowledge transfer.

The Domain of Communicating

A distinguishing feature of the BH4W research process was that each research participant noted how much she had enjoyed getting together with other women and discussing a topic of common interest. The communication style of this group was captured in two salient dimensions: first, building mutual trust among the partners, which was critical to engaging in reciprocity and respectful dialogue on a diversity of ideas, and second, the importance all members placed on using common terms and plain language.

Respect and trust were founded on the women's similar social backgrounds and values, as pointed to in the observations of this community partner:

I think the group worked because we're all women, sort of in the same age group sort of thing, sort of the same socioeconomic background, same sort of education and everything. So, I think in that way it was pretty successful. … In general, it was a very successful group because I think we were all responsible, like we were all committed and responsible, right? We were women of middle age, right? That's who we are and that's what we do. (C-2: community woman 2)

Other similarities demonstrated by these midlife women—their sense of responsibility, their level of commitment, and their idea of success—rested upon an open communication style that was fostered by working in a socially homogeneous group.

Despite this shared social context, at the outset of the working group a perceived imbalance in communication was noted between the respective clusters of partners (community women and dietitians):

Initially I felt it was mostly the nutritionists that had something to contribute. So, in the first couple of meetings I wasn't quite sure what we had to contribute, but probably we had a lot to say! Like I think that they respected what we had to say and listened to what we had to say. So yeah, they were listening to us and I think our points of view were respected. (C-2)

The main reason accounting for this initial sense of imbalance was likely due to an "*intimidation factor*" noted in the reflections of a community woman and a dietitian. Resolution of this lay-professional power imbalance occurred over time through dialogue and the emergent process of building mutual respect and trust:

One of the things that I noticed, and I mean it certainly dissipated as we met more often as a group, but there was sort of an intimidation factor between the community women and the dietitians. And that makes sense. I know what people tend to think about dietitians so that's a challenge we're always up against. But I don't know if we took enough time at the beginning to sort of break down that barrier before we jumped into things. And when we took the time to talk to them about, you know, this is what as dietitians we ideally wish you would know, and then it kind of helped them to know how can we get the most important part of that information into the resources that we were going to build. … It just reminded me of the need to change how dietitians are seen in the public and women's eyes. (D-3: dietitian 3)

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When the above quotes are taken together with the following two quotes, the combined effect illustrates how initial concerns about differences between the dietitians and community women were overcome by establishing an open communicative space. This environment encouraged meaningful discussions where all group members were active listeners and made purposeful contributions to ongoing discussions. A dietitian and community woman, respectively, reflected:

The face-to-face meetings, in general I'd say, definitely were what I remember and the highlight of it I would say for me. And with that, the opportunity to meet with another group other than dietitians or, you know, other health care professionals, and to really hear what they had to say, and to have it happen in a way that, you know, I think everybody did say what they really thought, and felt free to do that. (D-1)

I did like the commitment when we were there, you know, because we got together and there was no one who was kind of just dreaming of something; we were all just present, and I liked that. (C-3)

Inasmuch as value was afforded to listening carefully and making meaningful contributions, mutual respect was highly valued as a key element of building trust and was deemed critical to success in the project.

The women came to the BH4W project with opinions ranging from perceptions grounded in alternative belief systems to those grounded in scientific fact. A noticeable characteristic of the group was the diversity of ideas and opinions offered in the women's explicit knowledge. For example, this community woman's belief about a reliance on supplements coincided with her belief that it was not possible to eat the quantity of foods recommended in Canada's food guide:

Well, it [supplement use] is food for your body. … I think in the holistic thing you may be able to combine all the vegetables that come in organic [form] and all that in a powder and drinking water with two tablespoons of that gives you all that you need. I do feel that there's more than one way to look at what we were about, you know, and I think that not that I do a lot of research but, you know, I go to the health food store I pick up information, and I feel that it may not be scientific but there are a lot of things that are good in the holistic, you know. Not scientific meaning completely the way that science is right now: I'd

say a new science for many people, you know, and that scientists are starting to look at, too. So, I think it [the attention given to non-dietary ideas] was really good, it was almost like a moon, right, like one side of the moon was very well looked at, you know, but there's the other side that I think needs to be looked at, too. (C-3)

Her holistic approach to nourishing the body through a reliance on supplements contrasted to another community woman's holistic belief about obtaining adequate nutrition through food intake only: *NO supplements. I'm TOTALLY not into supplements. (C-2)* Although both women had their respective views on how to holistically nourish the body, the latter woman's emphasis aligned more closely with the dietitians' science-based perspective of relying on foods to nourish the body.

Despite differences, it was through a respectful and easy dialogue that the initial separation of diverse knowledge types merged into a new relational type of shared knowledge that manifested in the content of the print and website resources. The focus on a holistic lifestyle approach to bone health for the resources included simple, meaningful, and actionable ideas and represented this new relational knowledge that emerged from the partners' interactions. For example, following a discussion of various types of physical activity considered as beneficial to bone health and the community women's need for clear messages, the group decided to provide examples of weight-bearing activities on the print resource (Appendix 9). And, another example was the omission of detailed information (e.g., milligrams of calcium and micrograms of vitamin D) on the print resource. This type of information did not convey meaning to the community women. Despite an apparent lay-professional knowledge divide, it was through careful listening and open and honest sharing of ideas that the respect afforded to diverse opinions became both appreciated and reciprocated among the women as illustrated in these quotes:

I thought it [the group] worked really well. I thought that the nutritionists were very respectful of us, that they weren't—sometimes if you've worked as a professional they're dismissive of the lay person, and that did not happen at all. … But like I say, that's what I think the best part of how the group worked together is people were respectful of each other. (C-1)

I think we did mesh well together as a group and were very respectful of each other's time, opinions, and backgrounds and that kind of thing. I thought we were a very diverse group with very different backgrounds, both on the dietitian's side but also on the community women's side, which certainly brought a unique view to the team. So, I thought it was good that we all sort of seemed to be very open to acknowledging the differences in thoughts and ideas that people had. (D-3)

Underpinning the development of relational knowledge was the key element of building mutual respect as reflected in the following two quotes, one from a dietitian and the other from a community woman:

When we started discussing what we wanted to do with the project and where we saw it going, just in asking questions and trying to find the best solution or resource for that targeted group, I felt that I was really respectful of all different comments from the community women, and just trying to always bring it back to, you know, what was it that they really said was really important to them, and sort of took their suggestions to heart in coming up with recommendations as to what we wanted to do. (D-3)

One really good thing that I thought worked really well was the fact that there were things that we told the dietitians, there were things we didn't know that they thought everybody knew. And you're talking, I think, you know, three fairly bright ladies. And it was amazing what we didn't know. One thing that was neat was that we were never, ever made to feel stupid. It's easy to get sort of into that [professional] bubble of what's important and people actually have other things going on in their lives. (C-1)

The second dimension of communicating that emerged from the women's reflections was the group's investment in choosing to use common and easy to understand language in their discussions and correspondence. The commitment to this type of communication promoted a facile nature to the discussions. One community woman raised the need for plain language at our first meeting when the dietitians and I provided information using terms that hindered understanding by the community members:

There are lots of print resources out there in doctors' offices and places like that, and it [paper resources] seems to be kind of popular. (AR) Where they talk about 1200 milligrams of something. But none of us has any clue what you're talking about. (C-2)

Common understanding was reached by moving away from a reliance on professional jargon to deliberately using terms that carried meaning to the community women (e.g., two glasses of milk instead of 600 milligrams of calcium). The investment in using plain language paid off throughout the research process by stimulating and facilitating discussion, listening and learning, and generating a blended type of knowledge used for deciding on the content of the resources (Appendix 9).

The open communicative space that was shaped by the makeup, collegiality, and interdependence of the group members, the setting, and the language used also supported this easiness in dialogue. At times, members felt sharing ideas or asking questions was nothing more than just conversing with each other for the purpose of achieving a common goal; however, the power of conversational dialogue is implied in the following two quotes from community women: one woman (C-2) said, *I just talked about ideas,* implying a relatively effortless conversational style with other group members could lead to positive learning and actions, and another woman (C-3) remarked, *Any voice is another awareness*, implying the importance of being open to listening and responding to a diversity of opinions. Despite demographic similarities among the partners, there was a broad scope of ideas and diversity of opinions in the BH4W group: a diversity that demanded close listening, and although realistically not all ideas were incorporated into the final products, the value of listening to, following along, and understanding ideas was frequently acknowledged and often provided context in later discussions and collective actions. As one dietitian put it:

> *I think there were lots of times where especially as dietitians it sort of makes me think we're like oh, we want to get all this information but then we would say, Well, wait a second. Let's reflect back on what are the women in this group saying, as well as you had done those focus groups with women beforehand and they sort of highlighted what they needed to know and what was important for them. So I think coming back to that was a reminder of okay, yes we're dietitians and we love to tell everybody everything we know but the reality of the matter is this is what's important and we need to make sure we address those needs because that's who we're making these resources and targeting it for. (D-3)*

Just as there were benefits associated with communication by bringing various stakeholders into a collaborative partnership, challenges were also encountered. One commonly reported communication challenge was the decision to switch from face-to-face meetings to email correspondence due to difficulties with scheduling meetings. Although the switch was not perceived as a tension among the partners, this challenge was raised in the private exit interviews and has been referred to in an earlier quote (see D-1, p. 130), as well as by this dietitian:

> *I do think being in a face-to-face meeting is much more suitable to brainstorming and bringing together all the ideas and coming up with a really good consensus and making sure that we're all communicating in the sense that all of us understand what we're talking about. So, I do think that face-to-face is very important. But the reality in today's day and age is also sometimes it has to be through e-mail. (D-3)*

Furthermore, a caveat unique to one community partner that warrants attention related to her role in recruiting the community partners to this project:

> *I recruited the other two lay people who were both friends of mine, so I felt a sense of real responsibility about that, right? Like both to YOU and to THEM. If they weren't having a good time, then I would take that personally, right? Like I'm sure that they wanted to contribute because it's one of our peers doing it, and it was an interesting topic. And I know they both would have done it anyways, but I just felt because I was the one that had asked them that I had this responsibility to them. Well, see then I also have this responsibility to you because I recruited them. That people's schedules are changing and they're less available, or as [one community woman's] health changes and she's less available, then I feel like I'm letting YOU down, even though it's got nothing to do with me, right? I know really on one level I'm for sure not letting you down. It's nothing to do with me, but I do feel a sense of responsibility around it. (C-2)*

And finally, a source of frustration experienced by one community woman related to the amount of attention given to wordsmithing the content of the print resource:

I think like that whole thing about Vitamin D went on and on and on. Like we already knew what the answer was, like that you can't get it in food, that you need to take the supplements, but there seemed to be some need for great discussion about that. It just seemed to me we kept sort of going back to that again. (C-1)

Although these communication-centered challenges and frustrations were experienced by some of the women, through reciprocity and open discussion stereotypes were deconstructed, and the co-educational aspects of PP became more discernable as the project proceeded.

The Domain of Learning

Learning permeated the women's experiences, most notably by bridging knowledge-to-action gaps and increasing the capacity of the women to fully contribute to the production of the resources. When privately reflecting on their BH4W experiences, the women's most common expression was *I learned a lot.* Although a common experience of learning was shared at a congregate level, in the representative clusters of the group there was a discernable difference in the types of gains made from what they learned. The first dimension of learning showed the community women's learning centered on personal gains and the dietitians' and academic researcher's learning focused on professional and research gains, respectively. The second dimension of learning applied to all participants and highlights a bridging of participants' experiences between systems worlds and lifeworlds. The women learned to value each other's contributions of being open to listening to, and gaining a more informed understanding of, each other 's values. The value of applying a PP approach to combine different forms of knowledge generated new understandings with application in their real world settings, be that in personal, professional, or academic worlds.

When examining specific characteristics of the gains made: (1) the community women acquired knowledge and heightened their awareness of foods, lifestyle choices, and bone health; (2) the dietitians gained awareness of the scope of the community women's knowledge as well as competing demands that intersected with women taking care of their bone health; and, (3) as the academic researcher, I gained awareness of the complexities in

balancing group process with the collection and management of data in the context of an unfolding research process. As an example of these gains, one community woman described her personal learning: *Like it's given me knowledge, and changed my habits a little bit.* When asked how her habits had changed, she replied:

> *Beverage intake. Well, it's not even my beverage intake it's my beverage purchases, right?* [She started purchasing orange juice with added calcium for one teenage child who didn't like milk.] *And I'm actually really aware also now in my reading, like when I see articles in the paper about bone health or about vitamin D or whatever, I'm always really interested in reading. Because there's been so much now about vitamin D sort of being the miracle, the miracle vitamin, so I'm really conscious of that sort of thing. (C-2)*

Another community woman made the following remarks on her personal learning:

> *Well, it did change me because now I have more a view on, for instance, when we talked about just one small thing [vitamin D during the winter months]. Now I feel very free to tell everybody who doesn't know it's about how, you know, we don't get what we need from the sun during wintertime. Not many people know that. I assumed they did, right, and now when people say, Oh, I have to get outside in the sun, it's like wait a minute. (C-3)*

Although the above two quotes reflect gains associated with learning, they also intersect with the Domain of Acting, drawing attention to the inextricable link between learning and acting, where evidence for learning often manifests as action. Both quotes also reveal the second dimension of learning—the value of combining different forms of knowledge to generate new understandings that have potential application in real world settings. The following quotes convey how a dietitian and I had increased our awareness of considering different forms of knowledge for blending and incorporation into the resources:

> *It was interesting to hear viewpoints that were slightly different than what I'm more familiar with, so I learned a lot. I liked that it was a very grassroots approach, in sort of pulling together some, you know, general public people, whether we were dietitians or just the community women and getting a sense of what we felt was best for our community. (D-3)*

There was a great deal of information flowing back and forth between the women today…very engaging. [A community woman] brought forward design elements, [a dietitian] kept raising technical facts that affect the absorption of calcium from foods, and in response to this flood of facts [another community woman] reminded us all that she preferred the KIS (keep it simple) principle, especially for the print resource. Great exchanges. (AR, journal entry)

Indicators of an increased awareness of different forms of knowledge were evident, but the above two quotes also implicitly refer to how the women came to make sense of each other's knowledge and form new understandings through a bridging of lifeworlds and systems worlds. Integral to the process of learning, the women adopted both formal and informal roles as educators and learners: the community women became teachers of the complexities associated with midlife women making choices for bone health and the need for clear, simple, and actionable messages; the dietitians taught the value of using reliable and accurate information; and, I conveyed the importance of full participation and adhering to group process and PP principles to advance the research aspect of the project. The merging of these different types of knowledge helped this dietitian generate new understandings that shifted her thought pattern to one of considering the impact of the community women's perspectives in her regular professional work:

I was amazed at how the [community women's] perspective is certainly different, and I mean I KNEW that, but just to see that in action. Yeah, yeah. That was the best part of it for me is to see that, you know, because we [dietitians] all have a similar background and similar training so we think similarly, and I think we have too much focus sometimes on, you know, trying to include too much information or too much detail. We don't always realize what is really important and we get stuck in that, and I think it just goes around and around if it's just dietitians, you know, who are doing this work. … And, just in terms of the resources that I've developed, I think it [being engaged in the BH4W project] HAS helped me to be more aware of, you know, just the things like language level and clarity of the concepts. I have just more awareness of it, you know, of who might be reading it and what might make sense to them, so I definitely learned. … Our role as health professionals was to provide accurate information, and then it would be melded in how it was presented and, you know, about the way the website was put together, it would be melded into something that the community women felt was a useable tool, like something that they could use. (D-1)

As the above quotes indicate, the acquisition of new knowledge and skills was accomplished through the exchange of the 'local' knowledge of the community women and the 'research' and 'professional' knowledge of the academics and dietitians, respectively. The evolving shift away from functioning inside separate frames of knowledge (e.g., being too focused on scientific details) to forming a new blended knowledge (e.g., incorporating accurate, simple, meaningful, and actionable ideas into the resources) reflects the importance of ongoing and open dialogue that is a feature of PP.

Although beneficial aspects of learning were evident in the partners' experiences, tensions in the co-educative process—while not overt during the meetings—emerged in the reflections of two dietitians. Two dietitian partners proposed holding a workshop on bone health for the community women prior to the onset of the research project.

> *Well, I did feel that the dietitians sometimes were educating the women from the community, and in retrospect it MIGHT have been useful if they had some pre-reading or maybe had attended an osteoporosis ed session at the Women's Health Centre so that they had a little bit more background information. (D-2)*

Furthermore, the BH4W nutritionists faced challenges in the process of re-coupling systems and lifeworlds—the challenge of adjusting their 'power over' doctrine to one of 'power sharing', the challenge of accepting and integrating new forms of knowledge into the resources, and the challenge of applying new understandings from research outcomes into their practices—nevertheless, by grounding their activities in the processes of active listening, authentic dialogue, reflection, and action, they attempted to bridge their systems worlds perspective with the lifeworlds perspective of the community women. By interacting over time in a mindful and reflexive manner, the nutritionists came to value the socially-validated aspects of the participatory process (i.e., the community women's perspectives) and valued the material outcomes. In counterbalance to this notion, the community partners faced challenges in coupling their communication style with the dietitians' use of scientific information and in coming to recognize the value of their 'lay' ideas in generating meaningful content for inclusion in the resources.

Several other limitations associated with the learning activities were unique to certain partners. For example, one community partner preferred involving a nutritionist with an 'alternative' nutrition perspective:

> *The only thing that was missing maybe is to have somebody [a nutritionist] that's more into the alternative, you know. It would have been really good to have someone that works in the health food store. Because I do buy the products but I'm not a teacher. But there are some people that know what they're talking about, so it would have been really good to have someone like this that could really say: No, this is what research has been done on this. So, this way I think the professionals, the nutritionists, could as well maybe, you know, been able to read the information and have a more informed conversation with this person. (C-3)*

A dietitian offered another example of recruiting a partner with different expertise:

> *One thing I think we might have done from the outset, because we did tackle physical activity, it might have been good to have a physiotherapist at the table from the outset who worked in the area of osteoporosis. … We went into a lot of detail with the nutrition but maybe somebody, not maybe sitting in all of our meetings, that might have been useful. (D-2)*

Although challenges occurred throughout the project, the impact of obtaining value from using this novel approach to resource development did not outweigh the understandings gained from interactions among the participants and the production of the two resources. In particular, the nutritionists experienced a shift in thinking as they explored this "*new*" way of resource development. When asked about her experiences of collaborating with non-nutrition experts, this dietitian said: *I think that it was great because it made us focus on the right material for the targeted audience and the best way to communicate with them. (D-3)* The "*new*" approach was in contrast to each dietitian's usual resource development process. Providing the target audience with useful information is a goal for all educational resources; however, in their respective practice areas, none of the dietitians in the BH4W project engages intended users during their resource development processes. In regard to learning more about the research value of using a PP approach, even though this aspect was more heavily weighted to my role as academic researcher, other partners commented on the

project as "*an interesting process*" and "*an interesting topic and process*". The value of this "*interesting*" process is echoed in the sentiments of these partners:

> *Going into it, I didn't know what we were trying to make, what we were trying to do. Like I knew what, we wanted to educate middle-aged women about bone health, but I had no idea how we were going to get there. … I thought the process was interesting and I thought the topic was interesting. Like, I picked up things and not that I have incorporated a lot of them into my day-to-day life, but I'm more conscious of it. … It was interesting spending time with four dietitians in a room and the things you learned THAT way, as things that you learned that had nothing to do with calcium. Like there were just general things, you know, like all to do around food choices and things like this but not just bone health. And that was interesting because I don't know many dietitians. (C-2)*

> *It was interesting. I hadn't done anything like that before. It was nice to meet obviously new people, and I love working sort of on a grassroots level with consumers and clients and really getting to know what it is they really want. Because sometimes I think what we'd like them to want isn't necessarily what they really want. (D-3)*

Not only was actually engaging in the process perceived as interesting, a dietitian identified the initial attraction to considering her participation in the project was that she *had some curiosity* about the PP process as it applied to developing resources. She later reflected: *I think any dietitian who prepares education material for consumers would certainly benefit from it. (D-1)* The other two dietitians also shared their thoughts about the value of learning:

> *I hadn't been involved with something like that before so it certainly was a new experience and sort of opens your eyes to looking for other opportunities or other ways to create resources, and not necessarily just do them like you always have. (D-3)*

Well, you always learn something. I mean the fact that in that many meetings you actually could get something drafted, but that we could get input from professionals and the public, and come to some consensus and generate something like this relatively quickly. So, I think it was interesting. It's always interesting to meet other people. I'm somewhat isolated in my job so it's nice to meet other dietitians who are working on nutrition education endeavours. … The whole process of developing such a resource [print] and website and working together with community people and professionals helped me grow. So, like I say, [it was] nice to have just had that time working with some other dietitians. (D-2)

The inherent power in *I learned a lot* is how the learning manifested into action. The cyclic nature of learning involved acquiring new knowledge, using it, and reflecting on its use, which in turn led to new learning, and the cycle of learning continued. In this PP-driven process, critical reflection was central to learning and praxis (actions based on critical awareness). The diversity of knowledge and skills that members brought to the working group caused the partners to reflect on what they were saying, what others were saying, and what they were learning. As evidenced in many of the above quotes, learning in a respectful, supportive, and creative environment fostered a sense of empowerment that enabled and reinforced authentic participation, and vice versa. Through sharing and respectful dialogue, the blending of different types of representational knowledge into relational knowledge contributed to the dimensions of learning. Equipped with new knowledge, the learning that transpired in the BH4W project led to a variety of actions.

The Domain of Acting

Actions arising from, and intertwined with, the women's learning experiences ranged from those internal to the working group such as sharing new knowledge, new understandings and producing the resources to those external to the working group such as sharing new knowledge and the resources with others in their respective communities. Two dimensions of the partner's actions emerged: first, all partners believed their actions internal to the group would produce useful resources; and second, the scale of time taken for the partners to impart their newly acquired knowledge to others external to the group, which tended to align with the community women and dietitian clusters in the group.

With the dietitians, the potential usefulness of the resources in their professional practice areas served as a primary driver of their actions, although they were also driven to act due to their commitment to follow through on what they had consented to do upon agreeing to participate in the project:

> *I believed that if, you know, we kept going that there was going to be an end product that I thought was going to be really useful. And, I thought it was a worthwhile process, right? I mean certainly that, too. And, I didn't want to see the work that we had done in the beginning not go anywhere. (D-1)*

> *I enjoyed the process and I was hopeful that we were going to have a pretty good website at the end that I could tell my patients about. I will use it, yes, or not even just with my patients but we'll be putting this card out, I don't see why not, in our reception area, because we have many education pamphlets there and this would be one that some of our patients and other women coming through the centre could use, as well as women in the community, in general. (D-2)*

The potential for the dietitians to act by applying an involved PR approach to their current resource development processes was tempered by practical constraints of budget, time, and resources. This dietitian contrasted her current resource development practice to using PP and another less resource intensive consultative process, focus groups, and in doing so identified key challenges in utilizing more engaged types of approach:

> *You know, certainly if we were able to consult, I think we'd get a lot of feedback that would stop us going in the wrong direction sometimes. So yeah, I think it [using a PR approach] would be very valuable. … I think the main reason we don't do focus testing is a budgetary thing, and time, I guess, is the other thing. Also, lack of staffing, people to, you know, just sort of organize that. Because I mean you can't just go out and, you know, pull people off the street. You have to have some kind of systematic way of doing it. (D-1)*

Similar to the dietitians, the main driver for the community women's actions was following through on their decision to be involved in the project; as well, finalizing the resources was valued and provided motivation for seeing the project through to completion:

Like it's nice being part of something where you DO have an end product. Like, we had a goal and we accomplished the goal, and we saw the thing out. (C-2)

On a temporal scale, the community women and dietitians immediately incorporated the new blended knowledge into the resources; however, a noticeable difference between the two clusters was the amount of time taken to transfer newly acquired knowledge to others outside of the working group. The community women took immediate action by sharing their new knowledge as the process unfolded over time, indicating they valued the ongoing interactions and learning that resulted from their participation in the project: *It's getting information that you're learning and then being part of the process of passing on the information. (C-3)* On the other hand, the dietitians and academic researcher who had previous experience in developing nutrition education resources arguably gained a more tacit knowledge about the complexities involved in using this type of approach that required further review and processing before being put into professional and academic action outside of the working group. Despite this difference, the women noted short- and long-term practical benefits from their actions as depicted in the following reflections:

> *I really felt like, you know, it made us continually reflect on okay, well, that's great information but the group isn't telling us that's what is important to them, so let's reflect on what's more important to them. So, I really liked that aspect of the process and I do think having the community women in the room at the same time with us, you know, and coming up with this resource and working together with them meant that they continued to help us reflect on that, too. And I think it gave it a less science-y technology type approach to it, because it spoke in their language. (D-3)*

> *It's [learning/acting] a continuity, because you participate in something and you have your view, and like I said, I've learned a lot, so that's new information, right? You gather the information and then you pass it on to other people. (C-3)*

The latter quote is a reminder of potential enduring effects that can result from engaging in a collaborative and "*interesting*" process. This same woman went on to share her ideas on 'completing' the project:

The completion is just an ending, but I have learned so much in the process that there's no—I have to say for me, there's not really a completion, right, because it [the website] would still be feeding some information, right? So, the completion for me was okay, well I need to finish this to close it, but it's not really complete. It's never completed because the website is going to be there and you can look at the information. It just continues. (C-3)

One of the dilemmas undetermined is whether lasting effects of the partners' learning, reflecting, and acting experiences more closely reflected the women participating in the project rather than the approach taken in the study. The community women emphasized an interest in *"growing, learning, and trying different things"* and one dietitian noted her *"curiosity"* about using a PR approach for resource development, indicating the BH4W project was comprised of a group of motivated and inquisitive women whose experiences reinforced their pursuit to grow, learn, and explore new endeavours. Although similarities existed in the women's actions, the distinguishing differences added insight into the dimensions of action.

The usefulness of transferring new knowledge into action was evident: the community women eagerly shared their new awareness, knowledge, and skills throughout their involvement in the project as well as the final resources with family, friends, and clients; the dietitians occasionally acknowledged sharing their thoughts or experiences with family members and colleagues throughout the project; however, since completion of the BH4W project have distributed the print resource in the waiting room of the British Columbia (BC) Women's Hospital and Health Centre, posted the print resource and a link to the website on the intranet at BC's HealthLink Nutrition Services (formerly Dial-a-Dietitian), and made an electronic PDF version of the print resource available for callers to BC's Dial-a-Dietitian nutrition service. Also, the academic researcher has distributed the print resource to local libraries, community centres where several of the Phase I focus groups were conducted, two private gyms, a health unit, a dental office, and a book and coffee shop. The website is universally available. One advantage of working collectively with a mix of people rather than in isolation is an increasing awareness of a broader range of options for disseminating the resources.

Effective group process enhanced the communicating, learning, and acting experiences of the women in this partnership. The personal and professional experiences and the benefits

and challenges encountered in the BH4W project indicate support for blending ways of communicating, learning, and acting to achieve meaningful process and product outcomes. Establishing a good working rapport among the partners from the outset is critical to healthy working relationships since the experiences of the partners can impact on their personal and professional activities.

DISCUSSION

Reflecting on their experiences the women indicated they were challenged by, but enjoyed and valued, being engaged in the BH4W project. A sense of social connectedness ran through each woman's reflections. In analyzing the feasibility of applying PP to a resource development process, the experiences of these women showed a bridging of systems worlds and lifeworlds with the community partners influencing processes situated in systems worlds and the dietetic partners gaining a deeper understanding of influences that intersect with food choices in community women's lifeworlds (Kemmis, 2001). The collaboration and integration of experiential and credentialed expertise established an open communicative space for stimulating discussion. Adherence to PP and group process principles helped to manage power differentials and resulted in the participants engaging in ongoing dialogue, listening to each other, considering a diversity of opinions and belief systems, accommodating a shift in personal thought patterns, and relying on each other to create a shared social understanding of bone health that was incorporated into the resources. Insight from the women's experiences generated three crosscutting themes—communicating, learning, and acting—that I have used as a framework for organizing meaning obtained from the work. Each theme was comprised of unique dimensions, however, underpinning all themes were broader issues of space, power, and human agency. In this discussion, I will draw out the relevance of these issues specifically for nutrition educators who may be "*curious*" about applying PP to their resource development processes. Those who choose to integrate PP principles will be embarking on a journey of transformative thinking and acting.

The PP approach relies on a democratic process of knowledge decision-making and production (Cargo & Mercer, 2008; Green, 2008) and contrasts to the typical nutrition

education paradigm that almost exclusively relies on professional or technical knowledge to direct resource development processes. One key benefit of using a collaborative type of process has been characterized by Gaventa & Cornwall (2006, p. 123) as transforming traditional power relationships from those of "power over" to power sharing (Cieri & McCauley, 2007; Green, 2008). In the BH4W project, democratization of power happened not only between the 'researcher' and the 'researched' but also between the community women and the dietitians—a transformation that manifested over time in the loss of a perceived "*intimidation factor*" and a bridging of systems worlds and lifeworlds in the BH4W women's communicating, learning, and acting activities.

Communicating

Lying at the heart of enabling communication is the concept of open communicative space in which a diverse group of partners engage in sustained and "authentic" dialogue (Ferree, Gamson, Gerhards, & Rucht, 2002, p. 314) to better understand each other and develop trusting relationships while working to achieve resolution to an issue (Hyland, 2009; Kesby, Kindon, & Pain, 2007). This concept draws on Habermas' theory of communicative action (Habermas, 1984; Habermas, 1987) in which he proposes the generation of effective actions is achieved through critical discourse among a collective of diverse individuals. In Habermas' view, ideal communication can be approximated "if only the argumentation could be conducted openly enough, and continued long enough" (Habermas, 1984, p. 42). A free flowing discussion of opinions, perspectives, beliefs, and other ideas in an open and sustained, fair and equitable communication system is critical to adhere to key PP principles and norms of good group process. In the BH4W project, characteristics of an open communicative space included the use of non-technical language, building on the partners' strengths and resources, integrating different forms of knowledge to the mutual understanding and benefit of all the partners, developing mutual respect and trust, and a commitment of the partners to seeing the project through to its completion (Downey, Ireson, & Scutchfield, 2009; White, Suchowierska, & Campbell, 2004; Wicks & Reason, 2009).

Notwithstanding the impact of these characteristics on the BH4W project, the relative ease at which the women discussed points and achieved consensus in decision-making may have been an artifact of the women themselves: the partners were midlife women who participated with a sense of maturity and responsibility, curiosity, and interest. On one hand, similarities of gender, class, and race existed, yet on the other hand a strong diversity of opinions and ideas existed among the partners. These similarities and differences draw attention to the impact of group make-up on group process thereby highlighting the importance of engaging suitable partners in participatory projects (Mercer et al., 2008). Moreover, Israel et al. (1998) noted the impact of group make-up on extracting useful and meaningful findings from the research. In the BH4W project, the characteristics of the participants contributed to their sense of ownership of the project, to being accountable for the functioning of the group and nature of the discussions, and to the types of collective actions taken and resources produced, which consequently influenced the findings from the research.

While providing a suitable space for open communication may be overlooked when organizing meeting spaces (Dubois, Guastavino, & Raimbault, 2006), the BH4W participants' experiences highlighted the value of working in a social and physical setting that was conducive to active dialogue, and in turn, enabled learning and reflexive actions. The women's reflection on their sense of success was rendered through their ability to table, listen to, acknowledge, respect, and critically discuss a diversity of opinions in an environment without distractions. The setting enabled them to fill their knowledge gaps, expand their understandings, and foster their sense of connectedness. *"Just talk[ing] about ideas"* or creating *"just another awareness"* aren't just words: in this type of dialogue-dependent research words are data and in the case of the BH4W project these words conferred larger concepts of reciprocity and honest communication and the importance of an open communicative space in shaping new understandings of promoting bone health-related behaviours in midlife women (Leikas, Lindeman, Roininen, & Lähteenmäki, 2007).

Communicating scientific information in an accessible, simple, and useful way in resources targeted to lay women required extensive work and the wordsmithing challenged

one community partner in particular. However, she actively participated in finalizing the content of the two resources by coming to understand the value of having accurate messages that would carry meaning to all of the partners. With elements of power embedded in lifeworlds and systems worlds and when the interface of these two worlds meet in a sustained and respectful manner, an opportunity for diffusing positionalities of power exists (Cahill, 2007). Taking hold of this opportunity offers possibilities for personal and professional growth for people who engage in these types of activities. Honest and respectful communication was foundational to aspects of sharing power and in contributing to the partners developing a sense of human agency in regard to their participation in the BH4W project.

In the BH4W open communicative space, elements of easy dialogue as evidenced in earlier quotes, active listening, mutual trust and respect, and multidimensional learning iteratively strengthened each other (Wicks & Reason, 2009). By stepping away from the standard practice of technical expertise directing the process of resource development and stepping toward a more inclusive process, a sense of connectedness and responsibility to each other helped to foster the above elements and divest power distinctions among the women (Gaventa & Horton, 1981). This sense of belonging fed back into each participant's own sense of being and strengthened the capacity of each woman to take action toward achieving the group-determined goals (Lantz, Israel, Schulz, & Reyes, 2006; Lantz, Viruell-Fuentes, Israel, Softley, & Guzman, 2001). Over time, through dialogue the community women learned about bone health as they shared more of their lived realities and the dietitians learned to place greater value on the community women's 'local' type of knowledge for incorporation into the resources.

Learning

Each participant was motivated by and valued being a learner as evidenced in the women's most commonly reported experience: *I learned a lot.* Learning from each other cultivated, and was cultivated by, a shared sense of connectedness, which underscores an important element of PR that supports co-education and co-learning among the partners—the health of the relationship between the partners (Vásquez, Minkler & Shepard, 2006).

As trust built, relationships formed, comfort levels increased, and power differentials resolved, rotating educator-learner roles among the women became normal practice. The transformation that took the partners from a place where a notable 'intimidation factor' was in play as the dietitians felt the need to be the educators on bone health to a place where each member could act in the role of educator or learner at any given time represented a pivotal transition in resolving power issues in the BH4W project. As this transformation happened, the dietitians learned to value the contributions of the community women, and simultaneously, the community women more clearly recognized the value of their contributions to the process of resource development.

As exposure to lifeworlds and systems worlds infiltrated each other, group cohesiveness strengthened (Cargo & Mercer, 2008); however, it was not until the private exit interviews that the dietitian's educative role emerged as a tension. Despite face-to-face meetings being valued for providing an educative milieu that was responsive to the ongoing discussion of ideas—wherein the community women clearly valued their engagement with, and what they learned from, the dietitians, and vice versa—a proposal to hold a workshop on bone health for the community women prior to the onset of the research project was not raised until the private interviews of two dietitians. From what had previously been a silent notion, this suggestion of a pre-research educational event for managing knowledge-based differences has been discussed by Viswanathan and colleagues (2004) and proposed to have some merit in adding efficiency to a working group; however, this idea may be also be problematic when viewed in accord with the principles of PP. Two arguments counter the proposition of merit: first, through the process of co-education, knowledge grows and transforms not only with the learners but also with the educators. Thus, in the context of the work being completed, the nutritionists may have lost depth in their own learning about the lived realities of the community women by relinquishing part of their role as educators to external workshop teachers; or alternatively, in the case of project dietitians taking on the role of workshop teacher, no net time would be saved. Second, the purpose of qualitative research is to explore, learn, and share deeper understandings of certain phenomena, not to reproduce conventional knowledge. PP supports building on the strengths that each partner brings to the

research, and therefore, without the unconstrained exchange of questions, answers, ideas, thoughts, and opinions within the BH4W milieu, the educational and learning aspects of the project may have been diminished. For nutritionists who work in a systems world of practice, externalizing some of the educational aspects of a project to workshops may be considered an efficient way to close the knowledge gap between professionals and users of professional services; however, by shifting conventional ways of thinking and acting, Israel et al. (2008) and Lantz et al. (2006) have pointed to the value of teaching and learning that transpires during a free flow of authentic and deep dialogue among project partners. Enacting this type of transformational learning, or even thinking about it can be constituted as an aspect of professional development with the potential to impact the practices of dietitians (Jenkins, Mabbett, Surridge, Warring, & Gwynn, 2009; Waters-Adams, 2006). Also, of worthwhile note is that the two dietitians did not suggest an educational workshop during any face-to-face meeting, but did during their private exit interviews. This can be explained by one of three possible reasons: (1) the open communicative space was not as 'open' as the data suggest, (2) the dietitians felt it was too late to raise this idea once the meetings were underway, or (3) the idea for an educational workshop did not occur to the dietitians until they been away from the activities of the project for some time and had been able to reflect on their experiences.

In attributing value to the co-educational experiences, several factors could account for the uptake of new knowledge that resulted in the claim *I learned a lot*: the BH4W communicative space, the motivation and interest of the women engaged in the project, positive adjustments to the 'professional' versus 'lay' power differential, the personal and professional relevance of new understandings, and the potential usefulness of both process and material outcomes. Budd Hall once noted, "participatory research fundamentally is about who has the right to speak, to analyze and to act" (Hall, 1992), pointing to inextricable links between the forces of listening, learning, acting, power, and agency (Huang, 2010). In the case of the BH4W project, dimensions of the women's educating and learning experiences allowed the formation of strong linkages between these forces in an open communicative space, resulting in shifting positionalities of power and a diffusion of the boundary between

lifeworlds and systems worlds that manifested in immediate action and potentially latent action among the different partners (Cahill, 2007).

Acting

Bandura (2001, p. 2) defined human agency as "intentionally mak[ing] things happen by one's actions." The participants efficiently took action during the face-to-face meetings but differed in how they shared their experiences and the resources with family, friends, and colleagues. Despite differences between the actions internal and external to the group, the scope and efficiency of how the partners acted should not necessarily be interpreted as an indicator of value obtained by the partners from the research process as this notion may not always hold true (Israel et al., 2006). In terms of external actions, the community women's immediate sharing of newly acquired knowledge with family and friends was ongoing throughout the project. This contrasts with the health professional's use of the gains they made from their experiences that primarily centered on distribution and use of the final material resources and a potentially latent use in their work of new understandings they gained. This contrast in the different partners' actions raises the question of how immediate things have to happen to ascribe to Bandura's definition of human agency. The potential to act should not necessarily be cast in a light of non-action, and conversely, immediate action should not be taken to reflect greater value is obtained from participating. When translating research findings into practice, applying "*new*" strategies in often inflexible systems world will face greater challenges than applying learning in a lifeworld which is characterized by an easy flow of communication between people (Snyder, 2007; Wicks & Reason, 2009; Wilson, 2007). Despite the noted distinction of human agency in the BH4W partners, there are advantages with taking time to "make things happen" especially when considering change to conventional practice protocol. By taking time and becoming more informed about adopting potential changes to practice, nutrition educators are afforded an opportunity to engage in dialogue and debate of issues associated with enacting change; consultations that help identify and facilitate planning change strategies; implementation of a small-scale trial of a chosen strategy; and, evaluating the planned change effort, all of which aim to determine what

changes would be a good or poor fit within their system constraints (Butterfoss, Kegler, & Francisco, 2008; Glanz, Rimer, & Viswanath, 2008).

From this demonstration project, the nutritionists gained valuable insights through their actions that conceptually re-coupled system and life worlds. Although they perceived upstream challenges would hamper efforts to integrate an involved PR approach to resource development in their practices (e.g., support from administration; need for resources of time, personnel, and funds), they valued being engaged in a research process that fit with their professional work, afforded them a better understanding of the target audience, and increased their awareness for the social validation of resources by community women (Leff, Costigan, & Power, 2004).

In contrast to the dietitians, the community women immediately took action in sharing their new knowledge; however, it should be noted that motivation for this enactment of agency could have been due more to their commitment to life-long learning rather than their participation in a PR-informed project. Actuating life-long learning was integral to each community woman's belief system. This led to one of them acknowledging there was no true 'completion' to her BH4W experiences. Their commitment to the project wove through personal trajectories to learn and share information, a characteristic that fostered healthy working relationships among the group members. Not only were the community women driven to learn and share with the dietitians during the BH4W process, but they were also driven to achieve the production of successful resources that they eagerly shared with others in their external social worlds (Israel et al., 1998).

A common rally cry for health researchers and practitioners is a need to integrate research into practice. Two main benefits of having the nutrition educators closely collaborate with me as an academic researcher and the community members, included: (1) a better match between questions and issues faced by practitioners and the community members, and as a result material outcomes that matched the needs of the community partners, the professional needs of the nutritionists, and the research needs of me as an academic researcher (Glanz et al., 2008; Minkler, Wallerstein, & Wilson, 2008); and (2) the often overlooked benefit of a sense of connectedness among the participants (Bensimon, Polkinghorne, Bauman, & Vallejo,

2004). The dietitians appreciated working with their professional peers as well as the community women, and the community women appreciated working with the dietitians and each other. Connecting with other women of a similar demographic profile, but with a diversity of skills, knowledge, opinions, and beliefs, was a highlight of the women's experiences. On one hand, their experiences created shifts in thinking such as becoming aware of the value in understanding women's realities and how this impacts on food choices, and on the other hand, appreciation for wordsmithing the content of a resource so that it provides accurate and meaningful information to members of the intended audience. While much has been written about the importance of linking research and practice (Glanz & Bishop, 2010; Nutbeam, 1996), often research is conducted at a distance to practice. In the BH4W project, the use of a PP approach attempted to draw research closer to practice. Engaging nutrition educators in research is often contingent on the practical application of the research to their practice. The BH4W project provided nutrition educators who develop educational resources with the opportunity to link research and practice. Through their experiences, some of the benefits obtained by the participants were immediately put into action while others created an increased awareness for their potential later use in practice. Many considerations must be accounted for when making changes to normal practice behaviours, particularly in a systems world; however, a greater awareness of the benefits to including service users in solving practice-based issues is a good start for dietitians to practice in a more encompassing manner.

LIMITATIONS

This study was a first known attempt at using a PP approach to develop nutrition education resources for midlife women and bone health. Given the exploratory nature of the research and the approach taken, several limitations are specific to the partners' experiential aspects of this study. First, the demographic homogeneity (White, middle class) of this small working group of midlife women may have limited the scope of knowledge used to generate the resources. A working group with greater cultural and socioeconomic diversity may have resulted in more conflict and tension among the partners. This type of partnership would

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likely have altered the ambience and affected the sense of connectedness felt by the BH4W members, ultimately affecting the quality of the group's outcomes. Although PP principles attempt to increase understanding among diverse group members, members' experiences in a different PP resource development project may differ markedly from those in the BH4W project.

Second, my inexperience as an academic researcher in PP likely contributed to the partners' early sense of uncertainty about their roles and responsibilities in the newly formed group. Although this sense passed as trust and respect grew and the members took ownership of the process and outcomes, a lack of confidence at the outset may have been ameliorated by better articulation of possible roles and responsibilities during the recruitment phase. However, because there are many unknowns at the point of recruitment this is difficult to address. Also challenging is finding balance between an initial need for leadership in a newly formed group and the emerging self-determination among members of a group, both of which can affect an initial sense of uncertainty. Further to the point of uncertainty in the BH4W project, the possibility existed for women to behave in ways that were considered socially acceptable and not true to their own nature; however, I perceived this as a low risk due to the partners working closely with each other over an extended period of time.

A third limitation relates to the strong value given to social connectedness by the women in the BH4W project. Again, this may arise out of the relative homogeneity of the group. A group comprised of women and men, men only, or perhaps women in a different age range would reveal if this experiential aspect of collaborative work is distinct to midlife women and how it may or may not impact on achieving the goals of a group. A different partnership may reveal values that differ from those that emerged in the BH4W project.

And, a final limitation is that I was engaged as a researcher, nutrition educator, and midlife woman, and it is through this lens that I collected and interpreted the data and reported the findings, limitations, and implications for practice. Although this emic perspective aligned with my subjectivist epistemology, it directed the interpretation away from an alternative perspective, and therefore, the experiential findings of the BH4W project are not widely generalizable to other researchers or other partner groups. In spite of these

limitations, my analysis of the women's experiences in the BH4W project points to an overall positive experience for connecting, sharing, and growing with other midlife women in pursuit of a common goal.

IMPLICATIONS FOR PRACTICE

These experiential findings have practical implications for developing nutrition education resources: insofar as they are unique to this given situation, they also provide insight into possible effects of applying PP to other practice-based contexts. For example, as each member took on educator and learner roles they expanded their personal and professional knowledge and as they entered into and blended each other's knowledge worlds, they increasingly valued their respective contributions, thus enriching their BH4W experiences. The implication of this particular experiential aspect draws attention to the need to give critical attention to underlying factors that aim to generate synergistic group relationships while attempting to achieve the goal of producing valued resources. Intertwined with these learning experiences, was the partners' commitment to facilitating open communication through evolving and respectful dialogue. Without this openness, honesty, and integrity in each member's contributions, the authenticity of the resource content may have been compromised due to alternate group dynamics.

Thematic insight gained from exploring women's experiences of participating in the BH4W project showed how the meanings ascribed to their experiences conceptually fit with three common values of PR and PP—research, education, and action. This finding suggests using a PP approach in this research was a good fit with the goal of developing nutrition education resources, and in effect, helped to produce tools that were valued by the nutritionists and the community women. Despite limitations to implementing an involved PR approach to professional practice, the women's experiences indicated they valued using key principles of PR and PP (e.g., working in an inclusive and collegial environment and sharing the decision-making responsibilities for the content of the resources) to work together and achieve their goals.

The development of educational resources using a collaborative partnership approach does hinge on positive experiences of those engaged in the process. Effective communication tools are not developed in isolation, nor are they quick to develop; instead an in-depth understanding of the target audience will need to be taken into account when developing resources, by finding ways to incorporate intended users' multiple realities, which exist in a plurality of discourses. Nutrition educators who become involved in collaborative inquiries to produce quality professional tools will benefit from a broader scope of knowledge that can be applied to bridging theory, research, and practice in their daily communication and learning activities. Outcomes that affect the ability to communicate effectively among a diversity of people, to give and receive different types of knowledge, and to share outcomes with others may inform practices in ways that help clients' dietary behaviours become more closely aligned with dietary guidelines.

CONCLUSIONS

The BH4W project provided insight into the experiential aspects of engaging in a PP approach to develop nutrition education resources. This exploratory look at meanings ascribed to the women's experiences revealed explicit value was given to the phenomenon of social connectedness, and that implicit issues of power differentials and lifeworlds and systems worlds existed. The value of social connectedness that wove throughout the women's experiences supported their ability to work through lay and professional differences and to bridge different worlds.

Generating an inclusive and open communicative space lay at the foundation of social connectedness. The principles of PP come to the forefront when taking a theoretical view of these explicit and implicit characteristics of the women's experiences. PP represents a way of democratizing power and control issues, of co-generating an integrative knowledge that is understood and valued by all partners, and of facilitating an environment for people to share, critique, and resolve issues to achieve desired outcomes. PP also engenders cooperation, collaboration, and cohesiveness, all of which support a sense of social connectedness. In the BH4W project, what was important to the community women could not be outweighed by

what was important to the nutrition professionals, and vice versa; and in the process of striking a balance between meeting different members' needs a blended, relational knowledge was incorporated into developing the content for the resources.

In responding to the research question that is specific to the experiential aspect of the BH4W project, *How do the experiences of engaging in a PR-informed nutrition education resource development process affect personal and professional practices?,* a highly valued sense of social connectedness was felt by the women and motivated them toward their goal. While awareness for consuming adequate calcium and vitamin D has increased among the community women, they appear to be at a contemplative stage of changing their diets or using supplements. Although this is not overt behaviour change, awareness is considered an important cognitive phase of behaviour change (Prochaska et al., 2008; Spencer, Wharton, Moyle, & Adams, 2007). Despite this level of outcome on dietary behaviours, the community women have shared their new knowledge and distributed the print resource in their respective communities. And while to date none of the nutrition professionals has adopted a PP approach in her practice, their experiences in the BH4W project indicate they have a greater awareness for the practical value in working with users of their services, and may hold potential for them to adopt key principles of PP (e.g., inclusivity, co-education, power sharing) into aspects of their resource development processes. Following production of the BH4W resources, the nutritionists have used them in their practices indicating the nutritionists obtained value from their participation in the research. Furthermore, the meanings the partners gave to their experiences illuminate the value in examining experiential aspects of PR-informed projects as much as examining behavioural effects of the material outcomes to determine how research processes can better engage practitioners in studies that attempt to bring research and practice closer together.

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Chapter 5

Discussion and Conclusions

DISCUSSION

This dissertation comprises a qualitative case study of two companion studies: the first was designed to gain understanding of the context for how bone health enters into midlife women's food choices and the second examined the feasibility of applying a participatory practice (PP) approach to the development of nutrition education resources targeted to midlife women about bone health. The catalyst for this project came from my practice-based experience in developing resources as a nutrition educator and the focus on women and bone health reflects a current public health issue that is projected to worsen as the baby boomers enter their senior years (Papadimitropoulos, Coyte, Josse, & Greenwood, 1997; Statistics Canada, 2005). In addition, substantial quantitative evidence exists for a persistent gap between midlife Canadian women's dietary behaviours and current dietary recommendations (Poliquin, Joseph, & Gray-Donald, 2009; Statistics Canada, 2007). In the first phase of the research I used focus group methodology to gather perspectives from a diversity of women as a means to understanding factors that midlife women consider as important influences on their food choices for bone health. I also gathered data on how women access information regarding bone health and the types of information they find useful for supporting bone health-promoting behaviours.

Once informed by a contextual understanding of how midlife women consider bone health in their food choices, the second phase of the research examined the application of a PP approach to developing resources by engaging nutrition professionals in collaborative research with community women, an academic research assistant, and myself as an academic researcher. Using this type of approach marked a shift from a common paradigm of developing nutrition resources in which nutrition professionals direct the development process (Ndirangu, Yadrick, Bogle, & Graham-Kresge, 2008) to a more inclusive paradigm

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wherein nutrition professionals partner with the intended users of the resources in a collaborative, power sharing, and co-educational process to produce user-targeted educational resources. Borgatti and Cross (2003) and others (Kesby, 2005) explain that when people with 'technical' and 'lay' expertise partner to address an issue, a relational type of knowledge is formed—an integrative type of knowledge that is a blend of dichotomized knowledge sets represented by the various partners. Research has often not recognized the value of relational knowledge; however, Lincoln (1995) described the creation of this type of knowledge as being grounded in caring, equity, and reciprocity among the partners. These core values are common to participatory research (PR) (Fals-Borda, 1991) and PP, which has its roots in PR, thus suggesting a prospective value in using PP as an approach to resource development. By incorporating relational knowledge into the process for developing the BH4W resources, the resources were designed to meet the everyday realities and needs of midlife women and nutrition professionals who counsel midlife women on bone health (Horowitz, Robinson, & Seifer, 2009; Koné et al., 2000).

The focus groups in the first phase of the research provided a mechanism to investigate the context of women's food choices for bone health. My interpretation of the focus group data was predominantly informed by the contributions of Carol Devine, Carole Bisogni, Tanis Furst, and colleagues at Cornell University. These researchers have made substantial contributions to conceptualizing personal food choice systems and have produced theoretical frameworks for understanding the processes people use to construct these systems (Devine, Connors, Bisogni, & Sobal, 1998; Furst, Connors, Bisogni, Sobal, & Falk, 1996). In generating findings from the second phase, I was largely influenced by the thoughts of two prominent theorists: first, the German sociologist and philosopher, Jürgen Habermas, whose lifework on communicative action research focused my mind on ways in which engaged communication is valued, validated, and used by diverse groups of people and how it can be applied to everyday work (e.g., nutrition education); and, second, the provoking thoughts of John Gaventa, a political sociologist whose work led me to more fully explore the concepts of participation and power including the inherent differential between the lay and professional participants. In addition to the work of these two theorists, during analysis of the

BH4W project, I was drawn to using the recently published Integrative Practice Framework for Participatory Research (IPFPR) mostly due to its critical review of a wide range of PR studies, its comprehensiveness, and its practice-based public health focus (Cargo & Mercer, 2008).

The contributions that I make from my interpretations of the two companion studies are intended to add to conceptualizations of women's health, in particular, the ways that midlife women negotiate food and bone health issues. My work also presents considerations for nutrition practitioners who may contemplate changing their resource development process. I will begin this final chapter with an analysis of the context in which midlife women consider bone health in their food choices and other daily activities (Chapter 2). This will be followed by a discussion of conceptual issues that underpinned the feasibility study of cvollaborative resource development and have been captured in the BH4W process paper (Chapter 3) and the BH4W members' experiences paper (Chapter 4).

Finding Context for Bone Health in Midlife Women's Food Choices

The contextual findings of the first phase (see Chapter 2) indicate midlife women create a socially constructed working knowledge of health (McQuiston, Parrado, Olmos-Muniz, & Martinez, 2005). Today's women are continuously exposed to health information through friends, family, and the media (Worsley & Lea, 2003), and in this steady stream of information many are overwhelmed by a plethora of messages that are embedded in dominant and alternative discourses of health (Goulding, 2001). Despite their need to continually assess a large number of messages, the women in this study just wanted to make simple food decisions, and they wanted to view health from a holistic perspective. They did not want to view health in parts such that each aspect of health required specific attention rather they preferred to give simultaneous importance to all aspects of health. For example, most midlife women viewed bone health as important as heart health or achieving and maintaining a healthy body weight. This idealized view of making simple food choices and eating for holistic health may be a reflection of the lifestage of the women. Midlife is noted as a time when women experience a heightened sense of vulnerability to health concerns (Woods & Mitchell, 1997). Given that the concept of vulnerability is situated in the context of

risk (Petersen & Wilkinson, 2008) and often chronic diseases such as osteoporosis are not diagnosed until later in life (Osteoporosis Canada, 2002), the findings from this study revealed most midlife women had not yet made dietary changes that met their idealized eating pattern, nor had most made any dietary changes for bone health. Despite an overriding desire to simplify food decision-making processes and to eat for holistic health there were departures from the idealized holistic perspective. For example, women who were '*taking on bone health'* made food choices specifically for the bone aspect of health in response to someone close to them had experienced osteoporosis. Changes to food choice processes that address specific aspects of health suggest these midlife women may have sensed an increased vulnerability to their bone health moreso than women who were *'staying the course'*. In contrast, the primary motivation for women who were *'making it easy'* came from considering health in a holistic way. Regardless of the women's food choice strategy and despite feeling overwhelmed by exposure to a plethora of media messages, the women wanted a continual flow of "new" information that fit into the context of their lives or information that confirmed what they already knew. In the interest of providing meaningful dietary guidance, the women's desire for "new" information opens an opportunity for nutrition educators to better understand the needs of the users of their dietary services. One way to gain this type of understanding is to engage with the intended users in sustained dialogue.

Drawing out divergent roots for food choice strategies provided insight into meanings the women attach to *how* they make their food choices, and ways to situate this understanding in current conceptual food choice frameworks. For each of the three strategies related to food choice and bone health, midlife women factored in a range of influences when selecting foods: a finding that fits well with conceptual food choice models. Furst and colleagues (1996; Figure 1.1) indicate life course events and experiences have an overarching effect in shaping personal food choice systems. Devine and colleagues (1998) note a similar effect on persistent food patterns referred to as food trajectories. By the time women reach midlife they have accumulated a multitude of experiences that can potentially reinforce stable food trajectories, as demonstrated in women who were *'staying the course'* or, alternatively,

some experiences can create a turning point in a food trajectory as seen in women who were *'taking on bone health'* and *'making it easy'* (Wethington, 2005).

Through my examination of factors that led to the three food choice strategies and despite the multiple realities of midlife women's lives, they shared one idealized approach to considering bone health in their food choice systems: they wanted to eat for holistic health, and only by implication, eat for bone health. The utility of this knowledge allows us to theoretically contextualize our new understanding of midlife women, food choice, and bone health in broader conceptual socioecological models of dietary behaviours. Two of these models—the Integrative Framework for Research in Diet and Communication (National Cancer Institute, 2008; Figure 1.2) and the nutrition education model used by Contento (2007; Figure 1.3)—show how the convergence of constructs from communication theory (e.g., targeted and tailored messages), nutrition education (e.g., meaningful and actionable ideas) and women's health (e.g., holistic and unique) can theoretically effect dietary behaviour change. Although being informed by a number of models and frameworks does not create an integrated polytheoretical framework, there is value in using multiple conceptual frameworks as they cause us to consider the complex nature of making food decisions from multiple perspectives before we embark on researching *how* women develop strategies in their personal food choice systems. As indicated in the research of Phase I, the women's desire to eat for holistic health and their desire for "new" information illustrate the importance of nutrition educators understanding the wants and needs of the users of their services. Through sustained dialogue and improved understanding, nutrition education messages being developed are more likely to be relevant and meaningful to the target audience (Gal & Prigat, 2005; Horowitz et al., 2009).

Women's desire for a steady stream of "new" information may be satisfied by integrating recipes—a popular type of information—along with other types of information (e.g., exercises for bone health). Given that a goal of nutrition education is to close the gap between women's dietary intakes and dietary guidance, providing practical ideas in a website—such as recipes with nutrient information—may improve women's intake of nutrients that are of concern. Furthermore, websites that provide indicators of unbiased and

credible authors (e.g., author credentials, sources of financial support) can help increase users' confidence in the online information (Cline & Haynes, 2001; Eysenbach & Kohler, 2002; Sillence, Briggs, Fishwick, & Harris, 2004; Toms & Latter, 2007).

Nutrition educators have a crucial role in ensuring the credibility of online dietary information. In the BH4W project, national association websites (e.g., Osteoporosis Canada, Heart and Stroke Foundation of Canada) were respected sources of specific dietary and health information in addition to more general information found at government sites (e.g., Health Canada, Public Health Agency of Canada): industry websites and blogs were not considered credible sources. Moreover, some women look for ways to customize the online information (e.g., My Food Guide on the Health Canada website) (Brug, Oenema, & Campbell, 2003). With a more informed understanding of the ways in which midlife women manage nutrition education and information, the existence of a large pool of accessible dietary information of mixed quality, and midlife women's desire for a steady stream of credible, meaningful, and actionable information, attention is drawn to opportunities for nutrition educators to work closely with women during the development of nutrition education resources in order to provide consistent and reliable messages that reflect midlife women's needs and wants.

Answering the Call for Developing Nutrition Education Resources Targeted to Midlife Women, Food Choice, and Bone Health: Issues of Power, Space, and Human Agency

In the process of developing the two BH4W nutrition education resources, issues of power, space, and human agency underpinned the work of the partners. In this section, I will bring these issues from the background to the forefront to draw nutrition professionals' attention to the potential impact of these issues on collaborative research endeavours with lay users of their services.

In the two volumes of his treatise, *The Theory of Communicative Action*, Habermas' concept of "systems" world and "lifeworld" and the concept of open communicative space provided constructs for analyzing communicative action that transpired in the BH4W project (Habermas, 1984; Habermas, 1987). To understand meanings attached to the issues of power, space, and human agency in the BH4W project, I drew heavily on PR principles that are

commonly found in the literature as well as the above two conceptual theories of communicative action—systems worlds/lifeworlds and open communicative space. Based on an analysis of Habermas' work, Kemmis (2001, p. 93) summed up communicative action as "interrupt[ing] what we are doing (generally technical or practical action) to explore its nature, dynamics, and worth". In the BH4W project, an analytical distinction of systems worlds and lifeworlds was drawn between the nutrition educators who work in systems worlds that govern their practice and lay people who live in lifeworlds that influence their day-to-day behaviours. Like the community women, the nutrition professionals were midlife women, which cannot be ignored in taking a two-world analytical view of the BH4W project. As midlife women, the nutritionists' lifeworlds undoubtedly influenced their system's world perspectives with regard to the BH4W topic; however, it could be argued a mixing of the lifeworlds and systems worlds of the nutrition professionals strengthened understanding rather than weakening discussions among the group members. For the purpose of the BH4W study, the role of the dietitians was to bring technical expertise to the group and it is from this analytical perspective that I have drawn the conclusions presented in this chapter.

Habermas' work helps to understand the issue of power differentials among partners engaged in social forms of inquiry. The systems world operates within an economic-political sphere that, for nutrition educators, influences upstream administrative decisions (e.g., resource allocation) as well as downstream day-to-day practice decisions (e.g., educational material development processes). In contrast, the lifeworld operates within an interpersonal sphere that influences people's ordinary daily habits (e.g., women's food choices) (Frank, 2000). Habermas typically viewed the two worlds as segregated or "de-coupled"; however, they are mutually dependent with rationalizations formed in the systems world regularly "colonizing" or impinging people's lifeworlds (Edwards, 2007, p. 112), even though a relatively weak reciprocal input of lifeworld rationalizations has typically been assimilated into systems world operations (Bolton, 2005).

Habermas' theoretical concept of open communicative space represents dialogue where there is ease in expressing and respectfully reacting to diverse opinions and ideas (Habermas, 1984). In the BH4W demonstration project, the application of a PP approach with

good group governance and process in conjunction with an open communicative space provided two mechanisms for 'bridging' the system worlds of the professionals with the lifeworlds of the community women. To my knowledge, analyzing a nutrition resource development project from the perspective of 'bridging' lifeworlds and system worlds has not been previously reported. Despite this, I will attempt to intersect Habermas' theoretical contributions of communicative action with my analysis of the process and experiential aspects of the BH4W project to address the issues of power, space, and agency that existed in the BH4W project.

Applying PR-based principles to inquiry is recognized as a way to democratize power in generating new knowledge, in sharing control for all aspects of a process to achieve outcomes, and in bridging research and practice (Israel et al., 1998). In the BH4W project, a power differential between the professional and lay partners was of concern as a potential 'boundary-crisis' in Habermas' two-world schema (Wicks & Reason, 2009). A concern of this type may create tension among the participants; however, in the BH4W partnership as mutual respect and trust developed over time, issues of power and control normalized to a point where each woman comfortably shared, responded to, and reflected and acted on ideas. The effect over time of women engaging in sustained and respectful dialogue was a greater symmetry in the traditionally lopsided power relationship of input into each other's 'worlds' (Froomkin, 2003). As this demonstration project unfolded, there was a greater input of lifeworld rationalizations from the community women infiltrating the system worlds of the dietitians, leading to a greater balance of influence and control and a diffusion of the boundary between the two worlds of the dietitians and community women. In taking a 'bridging' view of the BH4W project, illustrations of infiltrating input into the respective two worlds are found in passages in Chapters 3 and 4, the lessons learned from the process aspects of the project in Chapter 3, and the dimensions of themes generated from the experiential aspects of the project in Chapter 4. The diffusion of a potential 'boundary-crisis' that led to modulating the power differential has been described by Gaventa and Cornwall (2006, p. 123) as a shifting of paradigms from one of "power over" to one of power sharing. Furthermore, human agency—described by Bandura as people having the capacity to "make

things happen by [their own] actions"—manifested throughout the resource development process as the women took on different roles (e.g., educator/learner, leader) and shared the finished resources among their social and professional networks.

Habermas' concept of open communicative space also impacted communicative actions among the BH4W partners. Similar to the conditions that fostered mutual respect and trust (e.g., good group governance and process, adhering to principles of PP), an open communicative space, too, created a bridge between lifeworlds and system worlds, modulated power differentials, and effected human agency, thereby helping to diffuse the boundary between the two worlds (Wicks & Reason, 2009). Participants who engage in a process of exploring the "nature, dynamics, and worth" of communicative action (Kemmis, 2001, p. 93) are considered "communicative equals" (Hyland, 2009, p. 336); however, for partners to be communicative equals an environment conducive to open communication is essential. The BH4W communicative space offered an opportunity for the women to move away from operating inside a secured context for interaction to operating in an exposed and trusting context for "authentic" communication (Ferree, Gamson, Gerhards, & Rucht, 2002, p. 314). In this environment the infiltration of different types of knowledge into the respective two worlds generated a type of collective knowledge that served to develop healthy and strong relationships among the women (Vásquez, Minkler, & Shepard, 2006), move the process forward, and successfully produce two nutrition education resources.

Using the theoretical concepts offered by Habermas as a backdrop to determining effects arising from the BH4W project, it is in regard to the development of strong and healthy relationships that I believe the BH4W project may have its longest lasting effects. Two instances have led me to believe this: a recent conversation with one of the community partners noted she felt comfortable in contacting any of the dietitian partners over two years out from our last face-to-face meeting, and the other instance occurred during the private final interviews when each of the dietitians voluntarily noted her appreciation for building relationships with her community and professional partners. In reflecting upon the effects of communicative action in the BH4W project, healthy relationships allowed the partners to maneuver among different communicative styles in a flexible and supportive space that

produced a democratic sharing of power and control aspects of the project. In addition, the empowerment of the partners that manifested as human agency was a benefit of working with a range of communicative styles in an open communicative space. This leads me to discuss human agency as the final broad issue that underpinned the BH4W study.

According to Bandura, human agency is fundamentally about people having the capacity to "make things happen by [their own] actions" (Bandura, 2001, p. 2). People's interactions in their different worlds lead to different understandings of their abilities to "make things happen" (Buki, Salazar, & Pitton, 2009). The Integrative Practice Framework for Participatory Research illustrates how the core elements of capacity building, empowerment, and ownership interweave through partnership processes and practices to facilitate human agency (Cargo & Mercer, 2008). Indications of empowerment that arose out of the co-educative aspects of the BH4W partnership manifested in the women's willingness and ability to share newly acquired knowledge with others, both inside and outside of the working group. Additionally, in an iterative fashion, their capacities to engage, learn, and grow increased as they continued their involvement in the project: relationships solidified and ownership of their efforts increased, as did sharing tangible and intangible outcomes in their various networks. The dedication of the partners in the BH4W project to distribute educational materials through a broad range of channels in their respective communities indicates that human and social gains were made.

These broader issues of power, space, and agency arose out of studying the challenges and rewards of using a PP approach to develop educational resources. The purpose of exposing these issues is to increase awareness among professionals who choose to incorporate inclusive approaches in their practices. There is a need to create an environment that minimizes the potential for tensions arising out of power differentials and to maximize communicative action among the partners so that each one has the capacity to take actions in the group and in their broader communities.

CONCLUSIONS

Throughout this dissertation, I drew inspiration from midlife women's voices, realities, expertise, and experiences to explore the context in which they consider bone health in their food choices and to examine their food choice strategies for bone health. I also examined the use of a participatory process that incorporated midlife women's voices, realities, expertise, and experiences into the development of educational resources for bone health, with the intention that the resources be valued by midlife community women and professional educators who counsel midlife women.

Several major contributions arose from the two studies. First, the plurality of discourses used by women to explain their choice or avoidance of foods revealed the complex nature of considering bone health in the food choices of midlife women. Although the awareness of compromised bone health in later years was known, at this time in their lives most women were not motivated to change their diet to include more foods that support bone health, with the exception of some women who were *'taking on bone health'* due to being proximately affected by osteoporosis. Moreover, women preferred to view health in a holistic way. Emerging from this preferred perspective was a desire to make simple food decisions and food choices that supported overall health. In spite of this preference, the majority of women were not *'making it easy'* in actualizing their idealized food choices but were *'staying the course'*. Regardless of the strategy employed, midlife women wanted a steady stream of consistent, credible, and relevant information that they could put into action in the context of their lives. In knowing this characteristic of midlife women, nutrition educators can engage with midlife women to gain a deeper understanding of their needs to determine the content of nutrition education that is meaningful and motivating to them.

Second, my conclusion from exploring the use of a PP approach in the BH4W study is that this type of approach fit well with generating nutrition education resources in this particular research-intensive setting and it also has potential utility in practice-based settings. The use of PP is based on existing principles of good public health and health promotion practices and these bodies of literature offer a substantive well to draw from to inform and guide PP endeavours. Given that PP as described in this dissertation is driven by, focused on,

and has value in responding to practice-based issues of a localized context, the use of PP to inform or reshape expert-driven practices to more inclusive processes may professionally benefit service providers and personally benefit service users alike. Practitioners who are "*curious*" about involving end users of their services in more engaged ways may find the benefits and challenges revealed in the BH4W study (Table 3.2 on page 104) useful in deciding to use a PP approach in their work. Nutrition professionals who do adopt a more inclusive approach have the potential to gain an increased understanding of how people consider health issues in their food selections, the limitations of people's knowledge about the synergistic effect of foods and health, and factors that are considered important in making food choices. Moreover, nutritionists may find they can apply this understanding beyond resource development activities to other aspects of their professional practice (e.g., counselling, advocacy work).

And lastly, with regard to both the tangible and intangible outcomes of the project, the success of a project hinges on the participants' motivation to stay engaged in the process and much of this motivation is stimulated by the perceived benefits they will gain from their efforts. The establishment and sustainability of a collegial, open, and supportive sense of community among the partners was important to enhance the communication, learning, and acting activities and the establishment of strong relationships that carried an effect well out beyond the end of the BH4W project. The potential of generating personally and professionally useful resources contributed to their continued participation in the study.

Insights gained from the process and experiential aspects of the project can be used to answer the primary research question: *In what ways can using a participatory practice (PP) approach to develop nutrition education resources be of value to the partner stakeholders?* I have included a summary of answers to the primary research question and specific Phase I and Phase II research questions in Table 5.1. Findings of the benefits and challenges from the process aspect of the BH4W study suggest that while shortcomings of normative resource development processes may be overcome and clear personal and professional benefits gained by using a PP approach to resource development, challenges exist for applying an all-encompassing PR approach in practice-based settings (Cornwall, 2008). Evidence from the

Table 5.1.   Summary – Answers to Research Questions

Overarching Research Question

In what ways can using a participatory practice (PP) approach to develop nutrition education resources be of value to the partner stakeholders?
In this qualitative case study, the findings from Phase I informed the research in Phase II and the findings from Phase II reinforced the findings from Phase I. Overall, the BH4W partners realized personal and professional gains and valued the material resources by using them in their extended communities. Indications rising out of the benefits and challenges encountered in the BH4W study point to limitations of applying a research-intensive PR approach in practice-based settings, however, there is potential for applying a PP approach to transforming practice-based activities. By engaging in the BH4W collaborative process, the nutrition educators increased their awareness of, and transformed their thinking about, the users of their services co-guiding the resource development process. The community women gained personal knowledge and skills that were required to produce nutrition education resources. As well, they contributed to the professional development of the nutrition educators and academic researchers. And finally, the value of using this type of PP approach to the academic researcher was the ability to provide evidence that substantiates existing theories and contributes to developing a practice-based model for collaborative resource development processes.

Phase I Research Questions

1. How is bone health balanced with other values of health?
For most midlife women, bone health is not given priority attention relative to other aspects of health. Women prefer to view health in a holistic way.
2. In what ways do midlife women consider bone health in their personal food choice processes?
Bone health is considered in food choices made for others (e.g. children); however, most women do not give specific attention to bone health in their personal food choice strategies. Some women who have been proximately affected by osteoporosis have changed their personal food choice systems to include more calcium- and vitamin D-rich foods and/or nutritional supplements.
3. What challenges, facilitators, and motivators do midlife women encounter when considering bone health in their food choices?
Challenges to considering bone health in food choices included putting family members' food needs before their own, a sense of limited personal knowledge of good food sources of calcium and vitamin D, the cost of food for some women, and a lack of family history of osteoporosis for other women. Facilitators included making an effort to choose healthy foods and eat for holistic health which indirectly implied eating a 'balance' of foods supported bone health, and making simplified food choices brought food decisions into greater balance with other demands of daily living. And the main motivator for women changing their dietary habits to benefit bone health was knowing someone diagnosed with osteoporosis.
4. What are the perceived needs of midlife women that will help them choose foods to support bone health?
Women want a steady stream of food information although many have sensed being overwhelmed with the amount of information available and are often confused by inconsistent messages obtained from different sources. Despite this, women still want simple, consistent, credible, meaningful, and actionable information that conveniently fits into their daily activities.

Phase II Research Questions

> **5. What are the process-related tangible and intangible benefits, challenges, and facilitators associated with using a participatory practice (PP) approach to develop nutrition education resources?**

Both tangible and intangible gains were attained in this project. The nutrition professionals gained by producing resources that are useful in their practices, understanding more about the complexities of midlife women's lives, learning how bone health fits into midlife women's food choice systems, and building relationships with their professional peers and others. The community women gained by learning about foods and bone health from the professionals, recognizing that their contributions were valued in the systems world of the professionals, producing resources that they shared in their respective communities, and building relationships with their peers and others. Challenges of time and resources, the effects of working with diverse opinions, knowledge sets, skills and experiences, and divergent orientations among the partners to task or process aspects of the research highlight some of the more common issues found in collaborative partnerships that are sustained over a period of time. Process-related facilitators included a dedicated group of partners, a physical space free of external distractions for holding regular meetings, an open communicative space, a strong sense of social connectedness, and a sense that the resources would be of value in both professional and personal practices. Furthermore, the evidence obtained from this research indicates dietitians were motivated to think about the benefits obtained from using PP in their resource development work. Engaging in research that is relevant to their practice provided an opportunity for dietitians to implement aspects of the research into their respective practices—be it in a cognitive or behavioural way—indicating how theory and practice can be drawn closer together.

6.	*What are the experiences of the stakeholders engaging in participatory practice (PP) and how do these experiences affect personal and professional practices?*

Through their communicating, learning, and acting experiences both internal and external to the BH4W group, the community women, nutritionists, and academic research team gained personally and professionally. The women described their sense of social connectedness with each other as a highlight of their BH4W experiences. In an open communicative space, the women listened, shared, learned, and grew during their involvement in the project. Through sustained dialogue, the dietitians learned about the ways in which midlife women consider bone health in their food choices, and through praxis increasingly valued the community women's contributions to the process. This led to a shift in thinking about the importance of including the intended users in their practice-based activities. Also, the community women learned about bone health and through praxis increasingly found a place for their perspectives in the development process. The community women put their newly acquired knowledge into immediate action in their lifeworlds by sharing it with their family and friends, while the nutritionists were more reticent to enact their new knowledge in their systems worlds. And, the academic researcher gained deeper theoretical and practical insight into the nuances, meanings, and undertones of applying a collaborative inquiry process to a pragmatic practice-based activity.

lessons taken from this research suggests nutrition educators may value incorporating a PP approach into their practice-based activities. Furthermore, the dietitians in the BH4W study indicated their exposure to, and engagement in, using a PP approach provided an opportunity for their own professional development. A focus on the experiential aspect of the BH4W project indicates psychosocial benefits of partnering lay and professional midlife women manifest in a sense of social connectedness among the partners that can remain years out from the end of a project. At the same time, women gained human capital through their participation in, and sharing resources from, the BH4W project. The overall conclusion from this critical analysis of the BH4W case study suggests an unrealized potential to incorporate PP into the development of nutrition education resources in practice-based settings.

In this research, the convergence of concepts taken from the PR literature, communication theory, nutrition education, food choice, and women's health were used to highlight opportunities for advancement and innovation in the resource development specialty area of nutrition education practice. I have outlined the role of research—as conducted within these two studies—that may contribute to changes in professional practice in this regard. However, as an immediate outcome from this analysis, it is my hope that practitioners use the benefits and challenges to stimulate further discussion about the suitability of these outcomes and adaptability of these processes in their own practice settings. An underlying theme that I have woven throughout this dissertation and that triggered this research in the first place, is exploring ways for nutrition services to better reflect the realities and needs of the users of these services. I understand that the specificity, scale, and shortcomings of this project may limit its usefulness to practitioners who consider adopting more inclusive processes in their work; however, I anticipate that the contributions made from this exploratory study may be useful to many more.

FUTURE DIRECTIONS FOR RESEARCH AND PRACTICE

What I offer here are ideas for future research that have emerged from conducting and analyzing the two studies described in this dissertation. Ideas for future research could better elucidate:

- The meaning midlife women give to eating for holistic health. How do midlife women define holistic health? In what ways do midlife women's dietary practices intersect with their view of holistic health? How do midlife women determine if they are, or are not, eating for holistic health?

- Alternative decision-making strategies women use to achieve eating for holistic health. How do different food choice strategies impact on the actual consumption levels of bone-related nutrients? How is the perception of eating for holistic health different from core concepts presented in *Eating Well with Canada's Food Guide*?

- The hierarchy or dynamic movement of eating priorities within a better-elucidated concept of holistic health. What is the stability of this idealized eating pattern? How is a pattern of eating for holistic health maintained?

- Why some women who are proximally affected by osteoporosis change their diets to support bone health while others do not. What are key factors that motivate women to change their diets in this situation? How are these motivating factors considered relative to other demands in their lives? What are the barriers for those who do not change their diets? How are these barriers considered relative to other demands in their lives?

Further to the above research priorities for gaining an in-depth understanding of the context of women's food choices, ways to practically use this understanding for the purpose of developing nutrition education resources also require attention: for example, determining how nutritionists call upon a diversity of lay and professional partners to form a collaborative partnership or how the quality of the partnership is assessed and how working relationships affect the outcomes. When using collaborative partnerships to develop educational resources, future research could also look to uncovering:

- Efficient mechanisms for incorporating collaborative partnerships into common practice-based activities. What elements of social inquiry processes are critical for achieving the goals of each partnership? What is the relative importance of using different mechanisms to assist group operations at different stages of the partnership?

- Training opportunities for engaging nutrition professionals and community members in collaborative partnerships. What is the role of workshops to prepare partners for their engagement in a partnership? What are key elements of a workshop? Who should facilitate a workshop?

- The effect of women's technology literacy skills on dietary behaviours. How differently do women interact with health information on the Internet compared with other channels of communication? In what contexts do women prefer tailored versus targeted nutrition information? What forms of communication have the greatest potential for impacting women's food choice behaviours?

- Potential impacts of the intangible gains on other specialty areas of nutrition professional practice. What aspects of engaging in collaborative resource development initiatives can be leveraged into other areas of practice? What are the effects of transforming practice on the professional development of nutritionists?

Research implications emerging from this critical evaluation of the BH4W project indicate generating further evidence for incorporating PP into practice-based activities should be undertaken. Future studies of collaborative inquiry ought to consider experiential as well as process aspects across more diverse partnerships; determine how different data collection tools fit with different types of partners; identify how PP can have a 'best' fit with practice-based activities; and, determine effective ways for incorporating these aspects of PP into practice. One of the main drivers for conducting this research was to inform my professional peers about the highlights and pitfalls of using a PP approach to develop resources. It is with

this in mind that, as a final section of this dissertation, I include a summary of the Implications for Practice for each chapter in Table 5.2.

In closing, to make these concluding remarks is really a beginning at exploring the context in which midlife women consider bone health in their food choices and ways to incorporate this context into meaningful and actionable nutrition education resources that meet midlife women's needs. A more balanced approach to obtaining benefits to practice from using a PP approach would be for nutrition professionals to pilot some of the key aspects of PP in selected practice-based activities. Implementing and evaluating this type of collaborative approach may provide insight into possible mechanisms for maximizing the benefits of using PP while minimizing the costs.

Table 5.2.   Summary – Implications for Practice

Phase I, Chapter 2: Focus Group Study
The strategies that emerged indicating where bone health fit into the food choice systems of urban midlife women provided context for designing nutrition education for this audience. Nutrition educators should be aware of midlife women's common desire to view health from a holistic perspective and not to separate health into multiple parts that require divided attention. Furthermore, midlife women want to keep food decisions simple in an effort to support holistic health. When counselling midlife women in dietary choices for bone health, nutrition educators can ask midlife women about the importance and/or meaning of holistic health in their food decisions. The effect, if any, of eating for holistic health may reveal factors that influence how women at this life stage develop food choice systems and can be incorporated into strategies used in providing dietary guidance. When seeking nutrition information, midlife women want materials offering simple, credible, meaningful, and consistent ideas that conveniently fit into the context of their daily activities. Because women are increasingly turning to the Internet to seek health related information, one strategy for targeting nutrition education resources to midlife women is through the development of interactive online resources. This study showed nutrition a majority of midlife women are not willing to make large cognitive investments in their daily food decisions, thereby suggesting that targeted nutrition education resources may be useful to many more midlife women than tailored resources. Further research is required to better elucidate the meaning midlife women give to eating for holistic health and how this meaning can be incorporated into nutrition education for midlife women.

Phase II, Chapter 3: Process Aspects of the BH4W Study
The potential for incorporating a PP approach in processes used to develop nutrition education resources holds benefit to nutrition professionals who are willing to partner with community members in a collaborative process. This type of partnership will provide nutrition educators with a greater understanding of the target audience, their daily living context, and their needs for nutrition education messages. Challenges to be aware of include recruiting suitable partners into the partnership, establishing and maintaining good group governance and process, sharing power and control, being open to a diversity of ideas, and achieving useful outcomes. By incorporating principles of inclusivity, power sharing, and co-education, nutrition educators may find, on balance, that the benefits of collaborative partnerships outweigh the challenges. Through their engagement they may also inspire colleagues to enter into dialogue and potentially rethink the professional meanings and values they hold onto when developing nutrition education resources. Moreover, engaging in this type of process yields intangible outcomes that may be incorporated into professional development opportunities and can contribute to other areas of professional practice (e.g., counselling, advocacy work).

Phase II, Chapter 4: Partners' Experiential Aspects of the BH4W Study

Coming together to discuss a topic of mutual interest and the sense of social connectedness that was created among the partners was a highly valued experiential aspect of the BH4W project. Although this underlying aspect of the project strengthened the working relationships and was important to accomplishing the work, understanding how it was achieved has practical implications. The success and failure of collaborative endeavours often depends on what happens early in the process. Early acknowledgement of the "felt needs" of others (Park, 1999, p. 143) strengthens the working relationships in this value-driven type of inquiry. The importance of supportive affective space in working relationships is often overlooked in project evaluations, yet it can have profound and enduring effects on the working relationships. The context in which resources are developed requires close examination to maximize the meaningfulness and sensitivity of the process in producing useful resources. The benefits gained through developing social connectedness in the BH4W project included: (1) opening streams of communication that led to better understanding each partners' needs, (2) synergistic learning that shed new light on professional meanings associated with the task of developing nutrition education resources, and (3) increased capacity for the partners to act inside and outside of the working group. Nutrition educators ought to be aware of experientially-related challenges in working with differences in knowledge, language, beliefs, and values. Bearing in mind that the goal is to resolve an issue (e.g., developing useful resources), underlying experiences that impact on the collaborative process should be given proportionate attention to the material outcomes.

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APPENDICES

APPENDIX 1: Phase I – Focus Group Recruitment Notice

UBC Food, Nutrition and Health

Women & Food Choice

Are you a woman 40-55 years old with no chronic disease? Are you fluent in written and oral English?

If yes, then we need your help!

We are conducting 2-hour focus groups with women to explore your dietary choices. We will be asking you to share your opinions, beliefs and practices about the food choices you make.

If you are interested in participating in one of these focus groups, please call Gail at **604-822-3934** for more information. Qualifying participants will receive $20 for completion of the focus group discussion. Public transportation and child-care costs will be provided, if needed. Call now!

APPENDIX 2: Phase I – Consent Form

THE UNIVERSITY OF BRITISH COLUMBIA

Food, Nutrition and Health
Faculty of Land and Food Systems
2205 East Mall
Vancouver, BC Canada V6T 1Z4
Phone: (604) 822-2502
Fax: (604) 822-5143

CONSENT FORM

Women in midlife and food choice.

Principal Investigator: Dr. Gwen Chapman, Associate Professor, RD, 243-2205 East Mall, UBC, Vancouver BC, V6T 1Z4, Phone: 604-822-6874. E-mail: gwen.chapman@ubc.ca
Co-Investigators: Gail Hammond, MSc, RD, PhD candidate, 214-2205 East Mall, UBC, Vancouver BC, V6T 1Z4, Phone: 604-822-3934. E-mail: ghammond@interchange.ubc.ca:
Susan Barr, Professor, RD, 245-2205 East Mall, UBC, Vancouver BC, V6T 1Z4, Phone: 604-822-6766. E-mail: susan.barr@ubc.ca

This study will account for a portion of the requirements for Gail Hammond's doctoral program in Human Nutrition at UBC. This study is funded by the Canadian Foundation for Dietetic Research, a not-for-profit organization that has placed no restrictions on this study.

PURPOSE OF THE STUDY
The purpose of this first phase of our two-phase project is to identify key influences on the dietary intake of women in midlife that may impact on their health.

STUDY PROCEDURES
You have been contacted in response to contact information you left in response to a research notice. This focus group will be audiotaped and is expected to be approximately 2 hours in length. During the focus group, we will be discussing, (1) how your health fits into your food choices, (2) what messages about food choice and health you would find important to have access to, and (3) what format would you want these messages. There are no known risks to participating in this study. At any time and without explanation, you may withdraw from the study, refuse to answer any questions, or request that something you say be deleted from the audiotape. You may be contacted in the next 12 months to request your participation in developing or evaluating an educational resource that supports middle-aged women's food choices.

CONFIDENTIALITY
We encourage all participants to refrain from disclosing the contents of the discussion outside of the focus group; however, we cannot control what other participants will do with the information discussed. All recorded information you provide in this study will be kept strictly anonymous and confidential by the researchers. All documentation will be given an alpha-numeric code to ensure anonymity. False names will be used in the transcripts from the focus groups. You will not be identified by name in any reports from this study. All data

from this study (audiotapes, transcripts and analysis documents) will be stored in a locked filing cabinet in the Food, Nutrition and Health building at UBC. Only the primary and co-investigators will have access to these documents. Any necessary clarification of information you provide will be sought within 6 months of this focus group. In a confidential and anonymous manner, data collected in this study may be shared with other researchers for the purpose of discussion. You agree to confidential use of the data collected in this study for subsequent analysis, interpretation and reporting.

REMUNERATION/COMPENSATION
As a participant in a Phase I focus group, you will receive $20 for your time. Local transportation costs will be provided, if needed, for attending your session. Monetary compensation to cover the cost for childcare, when needed, will also be provided.

CONTACT FOR INFORMATION ABOUT THE STUDY
Should you have any questions or concerns during or after the research sessions, you may phone the Principal Investigator, Dr. Gwen Chapman at 604-822-6874 or the facilitator, Gail Hammond at 604-822-3934.

CONTACT FOR INFORMATION ABOUT THE RIGHTS OF RESEARCH SUBJECTS
Should you have any questions or concerns during or after the interview about your treatment or rights as a research participant, you may contact the Research Subject Information Line in the Office of Research Services at UBC by phoning 604-822-8598.

CONSENT TO PARTICIPATE
Your signature below indicates you have read and understand the above consent information and agree to voluntarily participate in this research. Your signature also indicates that you have received a copy of this consent form to keep for your own records. Even after signing this consent form, you may withdraw from this study at any time without consequence by contacting either Dr. Gwen Chapman or Gail Hammond.

_____   _____   _____
PARTICIPANT NAME (PRINT)   PARTICIPANT SIGNATURE   DATE

_____   _____   _____
INTERVIEWER NAME (PRINT)   INTERVIEWER SIGNATURE   DATE

Please complete this section to indicate that you agree to be contacted by Gail Hammond (interviewer) within 12 months of this research, should the researcher need clarification of any information you have provided, or wish to contact you to request your participation in developing or evaluating an educational resource that supports middle-aged women's food choices.

_____
E-MAIL ADDRESS or PHONE NUMBER

Please complete this section if you wish to receive a summary of the research findings. This summary will be available approximately 18 months from now.

_____
E-MAIL ADDRESS or STREET ADDRESS   CITY/PROVINCE   POSTAL CODE

APPENDIX 3: Phase I – Demographic Questionnaire

<div align="center">

WOMEN, DIET AND BONE HEALTH
DEMOGRAPHIC & SCREENING QUESTIONNAIRE

</div>

Thank you for inquiring about the study on perimenopausal women, diet and bone health. I'd like to take a couple of minutes to ask you a few questions about yourself. This is will allow me to see if first you qualify for participation in the study and second to see which focus group would be the best fit with your profile. Many of these questions are of a personal nature and your response to each question is entirely voluntary. You may choose not to answer any of the questions.

What is your age category?

Younger than	40 years	_____
	40-42 years	_____
	43-45 years	_____
	46-48 years	_____
	49-50 years	_____
	50-52 years	_____
	53-55 years	_____

Do you have a chronic disease?

No _____ (Go to next question.)

Yes _____ If yes, what disease? _____
Thank you for your interest in this study. Unfortunately, for the purpose of this study, we are looking for women without a chronic disease condition.

Tell me if you have experienced any of the following conditions/symptoms in the past year?

Yes _____ No _____ more irregular timing of your menstrual periods (changes in frequency)
Yes _____ No _____ changes in the characteristic flow of your menstrual periods
Yes _____ No _____ at least one menstrual period in the past 3 to 11 months
Yes _____ No _____ night sweats
Yes _____ No _____ hot flashes
Yes _____ No _____ increased irritability
Yes _____ No _____ increased moodiness
Yes _____ No _____ trouble sleeping
Yes _____ No _____ unexplained weight gain

Tell me about any other symptoms you have experienced in the past year that would lead you to describe yourself as perimenopausal, if you describe perimenopause to be the transitional phase in a woman's life that leads into menopause.

SYMPTOM	FREQUENCY
SYMPTOM	FREQUENCY
SYMPTOM	FREQUENCY
SYMPTOM	FREQUENCY
SYMPTOM	FREQUENCY

What is your ethnic background? _____

_____

What language do you speak at home? _____

What is your current marital status?
Single/Never Married _____
Separated/Divorced or Widowed _____
Married/Common Law/Partnered _____

Do you have children living at home with you?
Yes _____ How many children currently live with you? _____
                        What are their ages?_____
No _____

What is your highest level of education?
You did not complete high school _____
You completed high school _____
You attended college, a training institute or university_____
You completed a program (e.g. trade, undergraduate degree) at a college, training institute or university) _____
You completed a post-graduate program at a university _____
Other: (please explain) _____

What is your current occupation?_____

Which category of household income best describes your current situation?
Less than $20,000 per year   _____
$20,000–$40,000 per year   _____
$40,000–$60,000 per year   _____
$60,000–$80,000 per year   _____
$80,000-$100,000 per year   _____
Greater than $100,000 per year   _____

THANK YOU!

APPENDIX 4: UBC Behavioural Research Ethics Board Approval Certificate

UBC   The University of British Columbia
       Office of Research Services and Administration
       Behavioural Research Ethics Board

Certificate of Approval

PRINCIPAL INVESTIGATOR	DEPARTMENT	NUMBER
Chapman, G.E.	Agricultural Sciences	**B04-0196**

INSTITUTION(S) WHERE RESEARCH WILL BE CARRIED OUT

CO-INVESTIGATORS:
Barr, Susan, Family & Nutr Sci; Hammond, Gail, Food Science

SPONSORING AGENCIES
Canadian Foundation for Dietetic Research

TITLE:
Using Focus Groups and Participatory Research in Developming Effective Educational Strategies to Counsel Perimenopausal Women Regarding Dietary Choices that may Impact on Bone Health

APPROVAL DATE	TERM (YEARS)	DOCUMENTS INCLUDED IN THIS APPROVAL:
APR - 8 2004	1	March 11, 2004, Advertisement / Consent forms Phase I & II / Questionanire

CERTIFICATION:
The protocol describing the above-named project has been reviewed by the Committee and the experimental procedures were found to be acceptable on ethical grounds for research involving human subjects.

Approval of the Behavioural Research Ethics Board by one of the following:
Dr. James Frankish, Chair,
Dr. Cay Holbrook, Associate Chair,
Dr. Susan Rowley, Associate Chair

This Certificate of Approval is valid for the above term provided there is no change in the experimental procedures

APPENDIX 5: Canadian Foundation for Dietetic Research – Consumer Focused Research Award

CANADIAN FOUNDATION FOR DIETETIC RESEARCH
LA FONDATION CANADIENNE DE LA RECHERCHE EN DIETETIQUE

May 26, 2004

Dr. Gwen Chapman, PhD, RDN
Associate Professor
University of British Columbia
Food, Nutrition & Health
21-2205 East Mall
Vancouver BC, V6T 1Z4

Dear Gwen,

RE: Using Focus Group and Participatory Research in Developing Effective Educational Strategies to Counsel Perimenopausal Women Making Dietary Choices that May Impact on Bone Health

Thank you for your recent submission to the Canadian Foundation for Dietetic Research Consumer Focused Research competition. We received many excellent applications, and the competition was stiff. Congratulations on being one of the successful applicants!

We are providing a few comments and suggestions from reviewers, in the hope that you will find them useful in planning and conducting your study.

"It's not clear whether the Phase 2 period can achieve useful strategies that will encourage improved consumption of bone-health promoting foods – not sure time is sufficient. It also appears that recommended strategies or messages will be tested with a broader representative sample. We are currently developing a bone health initiative that will take 5 years from the point of research to the point of execution. However, I suspect this proposal is not intended to take the ideas generated in phase 2 to implementation."

"Methods appear to be appropriate. It would be preferable to select focus group participants in Phase 1 from a broader geographical area if at all possible in order to more broadly generalize the results. Also should be remembered that the method of selection will result in motivated/health sensitive individuals and so can't necessarily be extrapolated to the general population. Might want to exclude women with osteopenia (as well as osteoporosis) and perhaps even those with family history of either."

"Budget appears to be missing some elements. For example, where do the costs of the expert facilitator/moderator come in? Where are recruitment costs? I would also suggest that $20 honorarium is modest."

Good luck with your research study!

Sincerely,

Judy Sheeshka, PhD, RD
Chair, CFDR Scientific Review Committee

TOGETHER ADVANCING NUTRITION

APPENDIX 6: Phase I – Focus Group Facilitator's Guide

Focus Group Guiding Questions

Welcome and thanks for coming to participate in this focus group about women, dietary choices and bone health.

Describe focus group process – audiotaping, confidentiality, no breaks.

Why we are here – informal, dietary practice research, semi-structured.

What my job is as moderator and researcher – keep the group on track, on time and monitor loud and quiet people.

Describe the 'rules' – there are no right or wrong responses, one person talks at a time, raise your hand if you want to add something to what is being discussed, feel that you can contribute freely.

Funnelled topics in the focus group discussion.

1. INTRODUCTION (5 minutes) (introductory questions)

   Tell us your name and one thing that you enjoy about food.

2. HEALTH (25 minutes) (transition questions)

   Have you found yourself giving more thought to health at any particular point(s) in your life?

       What aspect of health?

       Why then in your life?

   Currently, do you consider your health when making food choices?

       If so, what health issues do you consider in relation to specific foods and why?

       If not, what factors do you consider when making food choices?

   Does bone health fit into your decision-making around food choices?

       Discuss how it does or doesn't fit in.

3. FOOD CHOICE CONTEXT (50 minutes) (key questions)

In section 1 on the sheet of paper in front of you, take 5 minutes to brainstorm and write down what foods you think should be included in a diet that would optimize bone health and jot down why you think so. In sections 2 and 3, write down the food selections you make in your diet that you think benefit your bone health and foods that you think are not beneficial to bone health. We'll share those ideas when you are done. (Instructions posted on flip chart.)

On flipchart, write down responses as participants volunteer what they have recorded on their papers. Ask for any further ideas. Let's turn to looking at these food choices.

Where do you get your information from and do these sources lead to clarity or confusion or both regarding foods that support bone health?

What advice do you find confusing regarding dietary choices and bone health? What helps you clarify information?

What challenges or barriers do you face when making food choices that you consider are beneficial to your bone health?

What motivates you to make food choices that you consider are beneficial to your bone health?

What do you think about using supplements? Do you use them? Which ones do you use and why? How often do you take them?

In section 4, write down a message or several messages that you believe would improve your current food choices as you have written in section 2. For section 4, imagine yourself in the situation of having a two-minute opportunity to talk face-to-face with a nutrition professional who counsels women in midlife in choosing a bone health-promoting diet. What message(s) do you think would be most effective for this nutritionist to use to help you make dietary choices to improve your bone health?

In section 5 on the same page, write down what information you would like to have access to that would improve your current food choices that you have written in section 2 of the page (current food choices that are related to bone health).

4. SUMMARY (25 minutes) (ending questions)
Round Robin – continue on with the fictitious scenario of a two-minute summary to a nutrition professional who counsels women in midlife in choosing bone health-promoting diet
        Record aspects on flip chart

In reflecting upon our discussion today, what aspects do you think require the greatest action to assist middle-aged women in selecting foods that they consider to be beneficial to bone health?
        Summarize aspects

Does this reflect an adequate summary? Have we missed anything? Do you have anything else you want to say?

5. WRAP-UP (1 minute)
Thank you for coming, instructions for receiving honorarium, receipts for parking, childcare.

APPENDIX 7: Phase I – Focus Group Written Activity Sheets

Section 1

Foods that I think support bone health and why (brainstorm ideas).

Food	Why?

Section 2

<u>Foods I eat</u> that **support my bone health.** Explain what you think the link is between each food and your bone health.

Food _____   Why? _____

Food _____   Why? _____

Food _____   Why? _____

Food _____   Why? _____

Food _____   Why? _____

Food _____   Why? _____

Section 3

<u>Foods I eat</u> that **do not support my bone health**, and why you think so.

_____   _____
Foods not supportive of bone health   Why?
_____   _____

_____   _____
Foods not supportive of bone health   Why?
_____   _____

_____   _____
Foods not supportive of bone health   Why?
_____   _____

_____   _____
Foods not supportive of bone health   Why?
_____   _____

_____   _____
Foods not supportive of bone health   Why?
_____   _____

_____   _____
Foods not supportive of bone health   Why?
_____   _____

Section 4

Messages that I think would help me improve my food choices to better support my bone health.

Message 1. _____

_____

_____

Message 2. _____

_____

_____

Message 3. _____

_____

_____

Section 5

Resources that I would like access to that would help me make food choices to support my bone health.

_____

_____

_____

_____

_____

_____

APPENDIX 8: Phase II – BH4W Working Group Consent Form

THE UNIVERSITY OF BRITISH COLUMBIA

Food, Nutrition and Health
Faculty of Agricultural Sciences
2205 East Mall
Vancouver, BC Canada V6T 1Z4
Phone: (604) 822-2502
Fax: (604) 822-5143

CONSENT FORM

Using focus group and participatory research in developing effective educational strategies to counsel perimenopausal women making dietary choices that may impact on bone health.

Principal Investigator: Dr. Gwen Chapman, Associate Professor, RD, 243-2205 East Mall, UBC, Vancouver BC, V6T 1Z4, Phone: 604-822-6874. E-mail: gwen.chapman@ubc.ca
Co-Investigators: Gail Hammond, MSc, RD, PhD candidate, 214-2205 East Mall, UBC, Vancouver BC, V6T 1Z4, Phone: 604-822-3934. E-mail: ghammond@interchange.ubc.ca: Susan Barr, Professor, RD, 245-2205 East Mall, UBC, Vancouver BC, V6T 1Z4, Phone: 604-822-6766. E-mail: susan.barr@ubc.ca

This research will be used for Gail Hammond's doctoral thesis in Human Nutrition at UBC.

PURPOSE OF THE STUDY
The purpose of this second phase of our two-phase project is to use participatory research to develop an educational tool that a) communicates meaningful nutrition messages to perimenopausal women to enable them to choose foods that potentially enhance bone health, and b) will be of use to nutrition educators in counselling perimenopausal women about bone health.

STUDY PROCEDURES
As a participant in this study, you will be a part of a working group of perimenopausal women, nutrition counsellors and educators, and nutrition policy influencers. The group will meet regularly for approximately the next four to six months, with the number and timing of meetings being determined by the group. The group will also determine its own agenda, with the understanding that the product of the group's work will include development of an educational tool as described above. Each session of the working group will be audiotaped and is expected to be approximately 2 hours in length. We anticipate that your total time involvement will be approximately 12-16 hours. Within 2 months following completion of the working group's meetings, you will be asked to participate in an individual interview that will focus on your experiences in the working group and last approximately 1 hour. You may be contacted in the 6 months following the end of the working group activities to request your participation in evaluating the educational resource that supports middle-aged women's food choices. This evaluation process will include gathering data using a questionnaire to determine the value of the developed resource. There are no known risks to participating in this study. At any time and without explanation, you may withdraw from the study, refuse to answer any questions, or request that something you say be deleted from the audiotape. This study is funded by the Canadian Foundation for Dietetic Research, a not-for-profit organization that has placed no restrictions on this study.

CONFIDENTIALITY

We encourage all participants to refrain from disclosing the contents of the discussion outside of the working group unless agreed upon by the group; however, we cannot control what other participants do with the information discussed. The research team will keep all information you provide in this study anonymous and confidential. All documentation will be given an alpha-numeric code to ensure anonymity. Pseudonyms will be used in the transcripts from the working group and interview sessions. You will not be identified by name in any reports from this study without your agreement. All data from this study (audiotapes, transcripts and analysis documents) will be stored in a locked filing cabinet in the Food, Nutrition & Health building at UBC. Only the primary and co-investigators and members of the working group will have access to these documents. In a confidential and anonymous manner, data collected in this study may be shared with other researchers for the purpose of discussion. You agree to use of the data collected in this study for subsequent analysis, interpretation and reporting.

REMUNERATION/COMPENSATION

In compensation for your participation in this research working group and in recognition of your need to participate in multiple meetings, you will receive $100 for completing Phase II working group activities and private interview. Local transportation costs will be provided for attending your sessions. Monetary compensation to cover the cost for childcare, where needed, will also be provided.

CONTACT FOR INFORMATION ABOUT THE STUDY

Should you have any questions or concerns about the study now, during or after the research sessions, you may talk to the Principal Investigator, Dr. Gwen Chapman at 604-822-6874 or the interviewer, Gail Hammond at 604-822-3934.

CONTACT FOR INFORMATION ABOUT THE RIGHTS OF RESEARCH SUBJECTS

Should you have any questions or concerns during or after the research sessions about your treatment or rights as a research participant, you may contact the Research Subject Information Line in the Office of Research Services at UBC by phoning 604-822-8598.

CONSENT TO PARTICIPATE

Your signature below indicates you have read and understand the above consent information and agree to voluntarily participate in this research. Your signature also indicates that you have received a copy of this consent form to keep for your own records. Even after signing this consent form, you may withdraw from this study at any time without consequence by contacting either Dr. Gwen Chapman or Gail Hammond.

_____

PARTICIPANT NAME (PRINT)   PARTICIPANT SIGNATURE   DATE

_____

INTERVIEWER NAME (PRINT)   INTERVIEWER SIGNATURE   DATE

Please complete this section to indicate that you agree to be contacted by Gail Hammond (interviewer) within 6 months of this research, should the researcher need clarification of any information you have provided.

_____

E-MAIL ADDRESS or PHONE NUMBER

Please complete this section if you wish to receive a summary of the research findings. This summary will be available approximately 15 months from now.

_____

E-MAIL ADDRESS or STREET ADDRESS   CITY/PROVINCE   POSTAL CODE

APPENDIX 9: Phase II – BH4W Resources

What have you done for **YOUR BONES** today?

Visit us online: bonehealth4women.ca
Detach and keep in wallet

Bone-building Shopping List
Best calcium foods...
- ☑ cow's milk (fluid, evaporated, powdered)
- ☑ fortified beverages – soy, rice, orange juice with calcium added
- ☑ yogurt, kefir
- ☑ cheeses (except cottage and cream cheese)
- ☑ canned fish with bones – salmon and sardines

Some calcium also found in...
- ☑ tofu, made with calcium
- ☑ Asian green vegetables
- ☑ kale
- ☑ cottage cheese

Calcium supplements...
when you don't get enough calcium in your diet

bonehealth4women.ca

One in four Canadian women over the age of 50 years will develop osteoporosis.

Here's what you can do...

★ Eat calcium-rich foods – aim for 3-4 every day

★ Take calcium supplements when your foods don't provide enough

★ Get enough vitamin D to help your bones use the calcium

★ Take vitamin D supplements when your foods don't provide enough or if you are over 50 years old

★ Be active: do weight-bearing activities – walk, run, jump every day

Do you want to know more?
See you online! bonehealth4women.ca

Bone-building Shopping List

Vitamin D foods...
- ☑ cow's milk (fluid, evaporated, powdered)
- ☑ fortified beverages – soy, rice
- ☑ salmon
- ☑ sardines
- ☑ halibut
- ☑ oysters

Vitamin D supplements...
when you don't get enough vitamin D in your diet

Visit us online...
bonehealth4women.ca

UBC Food, Nutrition and Health

Women in Midlife Using the Internet to Seek Health Information

Are you a 40–55 year old woman with access to the Internet?

If yes, then we may need your help!

We are conducting 2-hour focus groups with women to gather your opinions on Internet health information resources.

Focus groups will be held on the UBC campus at the following times:
Wednesday, February 18th, 6:30 pm – 8:30 pm
Friday, February 20th, 10:00 am – 12:00 pm

If you are interested in participating in one of the above focus groups, please contact Gail at **ghammond@interchange.ubc.ca**, or **phone 604-822-3934**. Qualifying participants will receive a $20 gift certificate for participation in the focus group discussion, and $5 to cover transportation and parking costs. Call now!

APPENDIX 11: Phase II – Print Resource Focus Group Facilitator's Guide

Print Resource Facilitator's Guide

Welcome and thanks for coming today. The purpose of this focus group is to obtain your feedback on a print resource that has been recently developed.

Describe focus group process – audio-taping, confidentiality, no breaks.

Why we are here – informal, practical research, semi-structured.

My job as moderator is to: keep the group on track, on time (~1 hour), and monitor loud and quiet people.

Describe the 'rules' – there are no right or wrong responses, one person talks at a time, raise your hand if you want to add something to what is being discussed, feel that you can contribute freely.

I'm going to show you the print resource, and I have a few questions to ask you. First, I would like to get your immediate reaction then we will move onto more detailed questions.

This is the front side.

<u>Show front side</u>

What is your overall first impression?

Do you get any message(s) from it?

Do you have any other first impressions?

Okay, I am going to show you the back side now.

<u>Show back side</u>

What is your overall first impression?

Do you get any message(s) from it?

Do you have any other first impressions?

Now, for each side, I'd like to hear your opinions on the following:
- ✦ Messages.
- ✦ Graphics.
- ✦ Layout.
- ✦ Design.

So, let's go through each component on the front side first. There will likely be overlap of opinions among the various components as we discuss them. Then, based on similar questions, you can share your opinions about the back side.

<u>Messages</u>

Probes: Front

Does the heading capture your attention?

What other messages do you get from the front of the resource?

Do the messages mean something to you? If so, how. If not, why?

Are there any confusing messages on the front? How could they be made clearer?

Are there changes that you would suggest? Why?

Probes: Back

Does the "One in four…" heading capture your attention? Is it worthwhile? Does it mean anything to you? Why/why not?

Are the bulleted messages clear to you? Yes: What do they mean? No: Why not?

Is the shopping list clear? What could be changed?

<u>Graphics</u>

Probes:

What do you think about the image(s)? (Front: woman, construction theme, foods, gear; Back: supplement and food containers, running shoes, shopping cart on shopping list)

What works for you in the image(s) and what doesn't work for you? Why?

Do you have changes to suggest?

<u>Layout</u>

Probes:

What do you think about the layout? (vertical on one side, horizontal on other side)

What works for you and/or what doesn't work for you? Why?

Do you have changes to suggest?

<u>Design</u>

Probes:

>What do you think about the design? (Front & Back: colours, font style, font size, amount of text, detachable shopping list, tick marks on shopping list; Back: bullets)

>What works for you and/or what doesn't work for you in terms of design? Why?

>What suggestions do you have for changes to the design?

Now that we have some great feedback on the print resource, let's take the last few minutes to go around the table and each one of you can summarize your thoughts. So, just take a minute or two to think about what you like, what you don't like, and what you would change. Then we can wrap it up.

Okay. Let's hear about your likes, dislikes, and possible changes.

Are there any other comments?

<div align="center">Thank you so much for sharing your thoughts and time!</div>

APPENDIX 12: Phase II – Print Resource Focus Group Consent Form

THE UNIVERSITY OF BRITISH COLUMBIA

Food, Nutrition and Health
Faculty of Land and Food Systems
2205 East Mall
Vancouver, BC Canada V6T 1Z4
Phone: (604) 822-2502
Fax: (604) 822-5143

CONSENT FORM

Women in midlife, food choice and bone health.

Principal Investigator: Dr. Gwen Chapman, Associate Professor, RD, 243-2205 East Mall, UBC, Vancouver BC, V6T 1Z4, Phone: 604-822-6874. E-mail: gwen.chapman@ubc.ca
Co-Investigators: Gail Hammond, MSc, RD, PhD candidate, 214-2205 East Mall, UBC, Vancouver BC, V6T 1Z4, Phone: 604-822-3934. E-mail: ghammond@interchange.ubc.ca: Susan Barr, Professor, RD, 245-2205 East Mall, UBC, Vancouver BC, V6T 1Z4, Phone: 604-822-6766. E-mail: susan.barr@ubc.ca

This study will account for a portion of the requirements for Gail Hammond's doctoral program in Human Nutrition at UBC. This study is funded by the Canadian Foundation for Dietetic Research, a not-for-profit organization that has placed no restrictions on this study.

PURPOSE OF THE STUDY
The purpose of this focus group component of our project is to obtain feedback regarding a print resource that has been developed. The purpose of the print resource is to direct women to go to a website that contains content that is focused on strategies to improve bone health.

STUDY PROCEDURES
This focus group will be audiotaped and is expected to be approximately 1 hour in length. During the focus group, we will be discussing, (1) what your reactions are to the print resource, (2) what messages on the resource mean something to you and why, (3) what critical components of the print resource would you change and why, and (4) what other information would you like to see on this print resource, considering the purpose of the resource.

There are no known risks to participating in this study. At any time and without explanation, you may withdraw from the study, refuse to answer any questions, or request that something you say be deleted from the audiotape.

CONFIDENTIALITY
We cannot control what participants will say during the focus group or do with the opinions that are discussed when outside the focus group. All recorded information you provide in this study will be kept strictly anonymous and confidential by the researchers. All documentation will be given an alpha-numeric code to ensure anonymity. You will not be identified by name in any reports from this study. All data from this study (audiotapes, transcript and analysis documents) will be stored in a locked filing cabinet in the Food, Nutrition and Health building at UBC. Only the primary and co-investigators will have access to these documents. Any necessary clarification of information you provide will be sought within 6 months of this focus group. In a confidential and anonymous manner, data collected in this study may be shared with other researchers for the purpose of discussion. You agree to confidential use of the data collected in this study for subsequent analysis, interpretation and reporting.

REMUNERATION/COMPENSATION
As a participant in this feedback focus group, you will receive $20 for your opinions and time.

CONTACT FOR INFORMATION ABOUT THE STUDY
Should you have any questions or concerns during or after the focus group, you may phone the Principal Investigator, Dr. Gwen Chapman at 604-822-6874 or the facilitator, Gail Hammond at 604-822-3934.

CONTACT FOR INFORMATION ABOUT THE RIGHTS OF RESEARCH SUBJECTS
Should you have any questions or concerns during or after the interview about your treatment or rights as a research participant, you may contact the Research Subject Information Line in the Office of Research Services at UBC by phoning 604-822-8598.

CONSENT TO PARTICIPATE
Your signature below indicates you have read and understand the above consent information and agree to voluntarily participate in this research. Your signature also indicates that you have received a copy of this consent form to keep for your own records. Even after signing this consent form, you may withdraw from this study at any time without consequence by contacting either Dr. Gwen Chapman or Gail Hammond.

_____   _____   _____
PARTICIPANT NAME (PRINT)   PARTICIPANT SIGNATURE   DATE

_____   _____   _____
INTERVIEWER NAME (PRINT)   INTERVIEWER SIGNATURE   DATE

Please complete this section to indicate that you agree to be contacted by Gail Hammond (interviewer) within 6 months of this research, should the researcher need clarification of any information you have provided.

_____
E-MAIL ADDRESS or PHONE NUMBER

APPENDIX 13: Phase II – Focus Groups Demographic Questionnaire

WOMEN IN MIDLIFE
DEMOGRAPHIC QUESTIONNAIRE

Thank you for your interest in the study on women in midlife. Please take a couple of minutes to answer these questions. Many of the questions are of a personal nature and your response to each question is entirely voluntary. You may choose not to answer any of the questions.

What is your age category?

Younger than	40 years	_____
	40-42 years	_____
	43-45 years	_____
	46-48 years	_____
	49-50 years	_____
	50-52 years	_____
	53-55 years	_____
Older than	55 years	_____

Do you have a chronic disease?
No _____
Yes _____   If yes, what disease? _____

What is your ethnic background? _____
_____

What language do you speak at home? _____

What is your current marital status?
Single/Never Married _____
Separated/Divorced or Widowed _____
Married/Common Law/Partnered _____

Do you have children living at home with you?
Yes _____ How many children currently live with you? _____
                What are their ages? _____

No _____

What is your highest level of education?

You did not complete high school _____

You completed high school _____

You attended college, a training institute or university, but did not complete a program

_____

You completed a program (e.g. trade, undergraduate degree) at a college, training institute or university) _____

You completed a post-graduate program at a university _____

Other: (please explain) _____

What is your current occupation? _____

Which category of household income best describes your current situation?

Less than $20,000 per year _____

$20,000–$40,000 per year _____

$40,000–$60,000 per year _____

$60,000–$80,000 per year _____

$80,000-$100,000 per year _____

Greater than $100,000 per year _____

THANK YOU!

APPENDIX 14: Phase II – Pre-Focus Group Website Opinion Questionnaire

Pre-Focus Group Website Opinions

As preliminary work for your participation in the focus group, you will need to **complete this form and bring the completed form with you to the focus group**. The facilitator will collect these completed forms from you at the end of the focus group.

1. Finding Websites with Health Information

1.1. How do you usually find websites with health information? (Select all that apply.)

☐ Google, Yahoo, or any other Internet search engine.
What search words do you commonly use?

_____

☐ Through a friend or family member.

☐ Through your subscription to a list-serve.
What is the name and contact information for the list-serve?

_____

☐ Another way? Describe.

_____

_____

1.2. Which of the above routes do you use most frequently to locate health information on the Internet?

_____

1.3. What is your main reason for searching a health information website?

_____

2. Content of the 2 Websites

Instructions for Section 2
Section 2 has 2 sub-sections. We would like you to answer questions about each of the 2 following websites: **A. Bone Health 4 Women (BH4W) website (www.bonehealth4women.ca)**, and **B. Osteoporosis Canada (OC) website (www.osteoporosis.ca).** Please print out this form and complete it before arriving at the focus group. This activity could take approximately 30 minutes to complete.

First, please go to the BH4W website and carefully review the site. This may take some time to familiarize yourself with the website. You will want to read through the pages of the website and get a feel for what the website offers. Once you feel familiar with the website, then answer the questions in sub-section A below. Next, please go to the OC website and familiarize yourself with what the OC website offers. Move between pages to get a feel for this website. Once you feel familiar with the OC website, then answer the set of questions in sub-section B. Please complete both sections.

A. Bone Health 4 Women (BH4W) Website

2.1. Given the name of the Bone Health 4 Women website, did you expect to find specific information here?
□ No.
□ Yes.

   If yes, were you able to find the specific information that you were expecting?
   □ Yes.

   What information were you specifically looking for?

   _____

   _____

   Why is this information important to you?

   _____

   _____

   Was it easy to find this information?
   □ Yes. Tell us how you found this information.

   _____

   _____

   □ No. Tell us what changes could be made to the website to improve your access to this information.

   _____

   _____

☐ No.

What information were you specifically looking for?

_____

_____

Why is this information important to you?

_____

_____

Tell us what changes could be made to the website to improve your access to this information.

_____

_____

_____

2.2. For information that wasn't accessible through the BH4W website, tell us what information you would like to have accessed through this website.

_____

_____

Why is this information important to you?

_____

_____

Tell us how you think this missing information relates to bone health.

_____

_____

2.3. What did you find particularly useful about the BH4W website? Tell us why.

_____

_____

_____

B. Osteoporosis Canada (OC) Website (www. osteoporosis.ca)

2.4. Given the name of the Osteoporosis Canada website, did you expect to find specific information here?
☐ No.
☐ Yes.

    Were you able to find the specific information that you had expected?
    ☐ Yes.

      What information were you specifically looking for?

      _____

      _____

      Why is this information important to you?

      _____

      _____

      Was it easy to find this information?
      ☐ Yes.
      ☐ No.

2.5. For information that wasn't at the OC website, tell us what information you wanted to have access to through this website.

_____

_____

    Why is this information important to you?

    _____

    _____

    Tell us how you think this missing information relates to bone health.

    _____

    _____

2.6. What did you find particularly useful about the OC website? Tell us why.

_____

_____

_____

Thank you for completing this form. We will be discussing your ideas and the websites in further detail at the focus group. Please remember to bring a completed copy of this form with you to the focus group. Your focus group is scheduled for **XXXXXXX**.

APPENDIX 15: Phase II – Website Focus Group Facilitator's Guide

Welcome and thanks for coming to participate in this focus group about women in midlife and computer use.

Describe focus group process – audio-taping, confidentiality, no breaks

Why we are here – informal, practical research, semi-structured

What my job is as moderator and researcher – keep the group on track, on time (~2 hours) and monitor loud and quiet people

Describe the 'rules' – there are no right or wrong responses, one person talks at a time, raise your hand if you want to add something to what is being discussed, feel that you can contribute freely

SECTION 1

1. INTRODUCTION (10 minutes)

Tell us your name and two things that appeal to you about finding health information on the Internet.

SECTION 2

2.1. WEBSITE #1 – Bone Health 4 Women (~30 minutes)

2.1.a. What aspects of this website appeal to you? Why?

Look? Why?
Feel? Why?
Content? Why?
Organization? Why?
Navigation? Why?
Other (explain)

2.1.b. What aspects of this website don't you like? Why?

Look? Why?
Feel? Why?
Content? Why?
Organization? Why?
Navigation? Why?
Other (explain)

2.1.A. Changes You Have *Considered* Making

2.1. Did coming to this website cause you to ***consider*** making changes to your **diet**?
Yes.
What changes did you consider making?
Why would you make those changes?
No.
Why not? What would motivate you to make changes to your diet?

Probes:

- ☐ My usual diet already provides the calcium and vitamin D that I need.
- ☐ With my family food preferences, it's just too difficult to make dietary changes.
- ☐ It is not a priority for me right now. My priorities are…
- ☐ It is just easier for me to use a supplement.
- ☐ Other reasons (explain).

2.2. Did coming to this website motivate you to ***consider*** making changes to your usual **exercise** pattern?
Yes.
What changes did you consider making?
Why would you make those changes?
No.
Why not? What would motivate you to make changes to your usual exercise pattern?

Probes:

- ☐ I already include weight-bearing and resistance activities on a regular basis in my daily life.
- ☐ I find going to a gym is not for me.
- ☐ I don't like exercising on my own.
- ☐ I don't like exercising in a group.
- ☐ I don't know what exercises I should be doing or how much I should be exercising.
- ☐ I don't know how to find a certified personal trainer in my area.
- ☐ Regular exercise is not a priority for me right now. My priorities are…
- ☐ Other reasons (explain).

2.3. Did coming to this website cause you to *consider* making changes to your current **use or non-use of supplements**?

    Yes.

        What changes did you consider making?

        Why would you make those changes?

    No.

        Why not? What would motivate you to make changes to your current use or non-use of supplements?

    <u>Probes</u>:

- ☐ I already take enough supplemental calcium and vitamin D on a daily basis.
- ☐ I don't believe in taking supplements.
- ☐ I have supplements around home but I often forget to take them.
- ☐ Other reasons (explain).

2.1.B. Changes You Have *Actually* Made

2.4. Did coming to this website cause you to *change* your **diet**?

    Yes.

        What changes did you make?

        For what reason(s) did you make those changes?

    No.

        Why? What would motivate you to make changes to your diet?

    <u>Probes</u>:

- ☐ My usual diet already provides the calcium and vitamin D that I need.
- ☐ With my family food preferences, it's just too difficult to make dietary changes.
- ☐ It is not a priority for me right now. My priorities are…
- ☐ It is just easier for me to use a supplement.
- ☐ Other reasons (explain).

2.5. Did coming to this website cause you to *change* your usual **exercise** pattern?

    Yes.

        What changes did you make?

        Why did you make those changes?

    No.

        Why? What would motivate you to make changes to your usual exercise pattern?

Probes:

- ☐ I already include weight-bearing and resistance activities on a regular basis in my daily life.
- ☐ I find going to a gym is not for me.
- ☐ I don't like exercising on my own.
- ☐ I don't like exercising in a group.
- ☐ I don't know what exercises I should be doing or how much I should be exercising.
- ☐ I don't know how to find a certified personal trainer in my area.
- ☐ Regular exercise is not a priority for me right now. My priorities are…
- ☐ Other reasons (explain).

2.6. Did coming to this website cause you to *change* your current **use or non-use of supplements**?

   Yes.

   What changes did you make?
   Why did you make those changes?

   No.

   Why? What would motivate you to make changes to your current use or non-use of supplements?

   Probes:

- ☐ I already take enough supplemental calcium and vitamin D on a daily basis.
- ☐ I don't believe in taking supplements.
- ☐ I have supplements around home but I often forget to take them.
- ☐ Other reasons (explain).

2.2. WEBSITE #2 – Osteoporosis Canada (~30 minutes)
Repeat same questions as for the Bone Health 4 Women website.

2.7. What aspects of this website appeal to you? Why?
   Look? Why?
   Feel? Why?
   Content? Why?
   Organization? Why?
   Navigation? Why?
   Other (explain):

2.8. What aspects of this website don't you like? Why?
> Look? Why?
> Feel? Why?
> Content? Why?
> Organization? Why?
> Navigation? Why?
> Other (explain):

2.9. Personal changes that had been considered, or were actually made, and reasons for neither. (see Questions 2.3 – 2.8).

SECTION 3

USEFULNESS OF THE WEBSITES (20 minutes)

3.1. Have you shared information that you have learned from either website with others?

☐ Yes.
   a. What information did you share (this can include information from any of the resource links on either website)?

   b. With whom did you share the information?

   c. Tell us why you shared this information.

☐ No.

3.2. Overall, how would you compare the user-friendliness of the two websites?

3.3. Overall, what did you think of the approach to providing a website with information for bone health in the voices of middle-aged women?

3.4. *If you have any other comments regarding the BH4W website, please share them with us.*

Thank you for sharing your valuable time and opinions.

We greatly appreciate your effort!

APPENDIX 16: Phase II – Website Focus Group Consent Form

THE UNIVERSITY OF BRITISH COLUMBIA

Food, Nutrition and Health
Faculty of Land & Food Systems
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CONSENT FORM

Women in midlife using the Internet to seek health information.

Principal Investigator: Dr. Gwen Chapman, Associate Professor, 243-2205 East Mall, UBC, Vancouver BC, V6T 1Z4, Phone: 604-822-6874. E-mail: gwen.chapman@ubc.ca
Co-Investigators: Gail Hammond, PhD candidate, 214-2205 East Mall, UBC, Vancouver BC, V6T 1Z4, Phone: 604-822-3934. E-mail: gail.hammond@ubc.ca and Susan Barr, Professor, 245-2205 East Mall, UBC, Vancouver BC, V6T 1Z4, Phone: 604-822-6766. E-mail: susan.barr@ubc.ca
This study is research that accounts for a portion of the requirements for a doctoral program in Human Nutrition at UBC.

PURPOSE OF THE STUDY
The purpose of this phase of our project is to use focus group methodology to evaluate the effectiveness of two website health information resources.

STUDY PROCEDURES
You were recruited in response to information you left on our research phone line and the follow-up communication with a co-investigator of the study who briefly explained the purpose of this research. You are being asked to provide information about your current situation including: your age, highest level of education, ethnic background, current occupation, and annual household income. You have been given one week to decide if you wanted to participate in this focus group that will be audiotaped and is expected to be approximately 2 hours in length. There are no known risks to participating in this study. At any time and without explanation, you may withdraw from the study, refuse to answer any questions, or request that something you say be deleted from the audiotape.

CONFIDENTIALITY
All information you provide in this study will be kept strictly anonymous and confidential. All documentation will be given an alpha-numeric code to ensure anonymity. Pseudonyms will be used in the transcripts from the focus group. You will not be identified by name in any reports from this

study. All data from this study (audiotapes, transcripts and analysis documents) will be stored in a locked filing cabinet in the Food, Nutrition & Health building at UBC. Only the primary and co-investigators will have access to these documents. Any necessary follow-up of information you provide will be sought within 2 months of this focus group. In a confidential and anonymous manner, data collected in this study may be shared with other researchers for the purpose of discussion. You agree to confidential use of the data collected in this study for subsequent analysis, interpretation and reporting.

REMUNERATION/COMPENSATION
As a participant in this focus group, you will receive $20 gift certificate for your time and $5 cash for transportation to and from the focus group and any required parking costs.

CONTACT FOR INFORMATION ABOUT THE STUDY
Should you have any questions or concerns during or after the research sessions, you may phone the Principal Investigator, Dr. Gwen Chapman at 604-822-6874 or the facilitator, Gail Hammond at 604-822-3934.

CONTACT FOR INFORMATION ABOUT THE RIGHTS OF RESEARCH SUBJECTS
Should you have any questions or concerns during or after the interview about your treatment or rights as a research participant, you may contact the Research Subject Information Line in the Office of Research Services at UBC by phoning 604-822-8598.

CONSENT TO PARTICIPATE
Your signature below indicates you have read and understand the above consent information and agree to voluntarily participate in this research. Your signature also indicates that you have received a copy of this consent form to keep for your own records. Even after signing this consent form, you may withdraw from this study at any time without consequence by contacting either Dr. Gwen Chapman or Gail Hammond.

_____   _____   _____
PARTICIPANT NAME (PRINT)   PARTICIPANT SIGNATURE   DATE

_____   _____   _____
INTERVIEWER NAME (PRINT)   INTERVIEWER SIGNATURE   DATE

Please complete this section to indicate that you agree to be contacted by Gail Hammond (facilitator) within 3 months of this research, should the researcher need clarification of any information you have provided.

_____
E-MAIL ADDRESS or PHONE NUMBER

Please complete this section if you wish to receive a summary of the research findings. This summary will be available approximately 8 months from now.

_____   _____   _____
E-MAIL ADDRESS or STREET ADDRESS CITY/PROVINCE   POSTAL CODE

APPENDIX 17: Phase II – Website Online Questionnaire

Website Feedback Survey

We hope you have enjoyed your visit to our website! Please take a moment to complete our short website Feedback survey. It should take you no more than 2 minutes to complete. When you click on this Feedback Survey link, you will leave this website and be taken to an independent survey site called Survey Monkey. Your identity will be kept anonymous (i.e. we will not obtain any identifying email addresses or other contact information). By completing the survey, we will assume you have granted us consent to use your anonymous feedback. You may refuse to answer any of the questions.

Thank you for visiting the **Bone Health 4 Women** website and sharing your valuable time and opinions.

We appreciate your feedback!

Website Feedback Survey Raw Data

We welcome your feedback about our website, '**Bone Health 4 Women'**. Please tell us a little about yourself.

1. You are:
   - ☐ Female (all 12 respondents)
   - ☐ Male (0 respondents)

2. What is your age?
   - ☐ 19-29 years (#8, #10)
   - ☐ 30-34 years
   - ☐ 35-39 years (#2, #12)
   - ☐ 40-44 years
   - ☐ 45-49 years
   - ☐ 50-54 years (#1, #4, #5, #6, #7)
   - ☐ 55-59 years (#3, #9, #11)
   - ☐ 60-64 years
   - ☐ 65-69 years
   - ☐ 70+ years

3. What is your occupation?
   - #1.   Teacher
   - #2.   Hospital clerk
   - #3.   Retired
   - #4.   Pharmacist
   - #5.   Lawyer
   - #6.   Personal trainer (fitness)
   - #7.   Teacher & cashier
   - #8.   Student
   - #9.   Teacher
   - #10. Teacher
   - #11. Retired teacher
   - #12. Dietitian

4. What is your <u>highest level</u> of education?
   - ☐ You did not complete high school.
   - ☐ You completed high school. (#7, #8)
   - ☐ You attended college, a training institute, or university, but didn't complete a program.
   - ☐ You completed a program (e.g. trade, undergraduate degree) at a college, training institute, or university. (#2, #4, #6, #9, #11)
   - ☐ You completed a post-graduate program at a university. (#1, #3, #5, #10, #12)
   - ☐ Other: (please explain). (#6, no explanation provided)

5. By visiting this website, I have:
- ☐ I have done nothing. (#9, #11, #12)
- ☐ I have thought about changing my diet, but haven't made any changes. (#8)
- ☐ I have thought about changing my physical activities, but haven't made any changes. (#2, #8)
- ☐ I have thought about changing my use of supplements, but haven't made any change. (#10)
- ☐ I have changed my diet. (#1, #2, #3, #6)
- ☐ I have changed my physical activities. (#1, #2)
- ☐ I have changed my use of supplements. (#5, #6)

6. Please share any comments that you have about our website.
- #1.   This is a great catch-all website! Thanks.
- #2.   Great job.
- #3.   Very informative…easy to read and make it possible to make some changes in my diet.
- #4.   Excellent website. I especially liked the exercising pictures!
- #5.   I found the information very accessible and practical. Website is laid out well. I liked the use of stories to make a point.
- #6.   Great website, I will be sure to pass on the web address to all my clients.
- #7.   Enjoying health is related to nutritional immunology.
- #8.   Home page contains too much information, i.e. it's a little wordy. I like the color scheme, though.
- #12. I like the combination of real life stories and professional information. The recipes are a great addition!