ABSTRACT

Title of Document:	WOMEN'S VOICES: INTEGRATING DIFFUSION OF INNOVATIONS THEORY WITH SOCIAL MARKETING TO UNDERSTAND WOMEN'S HEALTH
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Women's health serves as a marker for societal health and wellness. Women champion access to health care services for their children and families. The mother-child dyad provides a unique view of the duality of women's reproductive health. Particularly in the time period following the birth of a child, the health of mother and baby remain inextricably linked. This study focused on biological mothers of newborns.

The purpose of this study was to explore how biological mothers of newborns made meaning of health. A secondary purpose of this study was to explore how women made meaning of current social marketing campaigns targeting their health. The theoretical goal of this study was to elaborate conceptual opportunities for the integration of diffusion of innovations theory within a social marketing framework.

Literature regarding social marketing, diffusion of innovations theory, and women's health contributed to this study. The literature review suggested the potential to apply diffusion of innovations theory to a social marketing framework in order to better understand women's health and the health of their families.

A qualitative research methodology was used to collect and analyze data. Specifically, 44 in-depth interviews with mothers of newborns provided insight into how these women made meaning of their health. Analytical techniques from the grounded theory approach were used to analyze these data. A feminist research perspective situated this study as praxis-oriented audience research to uncover new mother's health needs within a social marketing framework.

Themes emerged regarding social marketing, diffusion of innovations theory, and women's health. Findings suggested that these mothers of newborns embody and challenge the mother-child dyad in various ways, resist the biomedical paradigm, and envision new ways to interact in their social networks.

This study contributes to the social marketing scholarly body of knowledge by developing the application of diffusion of innovations as a particularly relevant and useful theory. Results indicate that diffusion of innovations theory offers an audience segmentation opportunity based on innovativeness and adopter categories. Findings suggest opportunities to apply diffusion of innovations theory within a social marketing framework to better understand women's health and the health of their families.

WOMEN'S VOICES: INTEGRATING DIFFUSION OF INNOVATIONS THEORY
WITH SOCIAL MARKETING TO UNDERSTAND WOMEN'S HEALTH

By

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Dedication

"The first problem for all of us, men and women, is not to learn, but to unlearn."
- Gloria Steinem

I dedicate this dissertation to all those who have helped me to "unlearn."

Foremost are the women who agreed to participate in this study through interviews. I am

grateful for their generous contribution of time, energy, stories and especially, their

voices.

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Chapter 1: Introduction

Addressing women's social position and improving the health of women offers

opportunities for improved health outcomes for society. Women's health issues recently

earned increased national recognition through the passage of the Patient Protection and

Affordable Care Act. These new regulations prevent health insurers from denying

coverage or charging higher premiums based on gender or health status (Rangel, 2010).

While the Affordable Care Act covers preventive health services, such as maternity

benefits, states continue to debate the impact of it on other reproductive health services,

such as abortion. Debates about women's reproductive health resulting from the

Affordable Care Act illustrate how improving the health status of women requires a

systematic commitment to addressing women's invisibility and the distortion of women's

experiences to transform social inequalities.

In a postmodern context, women's bodies serve as a site through which both

personal and social identity is formed in relation to gender and reproduction. Social

expectations regarding reproduction define and limit women's gendered role in society,

often dictating women's understanding of their bodies. Furthermore, the medicalization,

or pathologizing, of women's bodies marginalizes women and triggers an identity

struggle. The existing research and analysis of gender, reproduction, and the body

substantiates the need for further inquiry into the social constructs that contribute to the

understanding of women's health. This dissertation addressed one particular arena for

social constructions of women, through the study of mothers of newborns, which has

significance for the understanding of gender and the body, as well as for specific inquiry

into women's health. The mother-child dyad presents a unique view of the duality of

women's reproductive health. Particularly in the time period following the birth of a child, the health of mother and baby remain inextricably linked. The strong needs of the woman and the baby during this period highlight the dichotomy between the self and other.

This study takes a social constructionist approach, which views health and illness as constructed by preexisting meanings, values, beliefs, experiences, and shared cultural understandings. Dutta (2007) described culture as a collection of values, beliefs, and practices that are shared in a community. The social constructionist perspective suggests that culture influences understandings of health (Edgar, Freimuth & Hammond, 2003). Sharf and Vanderford (2003) described the biomedical paradigm as the traditional view of health and illness through which the medical establishment locate disease in the body, identified and defined by objective signs and symptoms. Medical historians describe the "ontological" basis for disease as existing in a Platonic sense independently from the person who experiences the disease (Babrow & Mattson, 2003).

The alternative to the biomedical paradigm is the biopsychosocial paradigm, which offers a social constructionist approach to illness, health, and medical care by considering the values, beliefs, and practices of a community (Kline, 2003). According to Babrow and Mattson (2003), medical understanding of disease is constantly disputed by changes in social attitudes, new diagnostic exams, and improvements in treatment, which underscores the challenge of separating disease from attitudes, beliefs, and social values.

This study sought to understand what women know, believe, value, and say will help them to improve their health and by extension, the health of their children and family members. This study integrates diffusion of innovations theory with social

marketing to better understand women's health and the health of their families. Qualitative methods were used to collect and analyze data. Specifically, in-depth interviews with mothers of newborns provided insight into how these women make meaning of their own health and of health campaigns targeting them. A feminist research perspective situates this study as praxis-oriented audience research to uncover new mother's health needs within a social marketing framework.

Diffusion of innovations theory provides a population-based approach to explore how women make meaning of their health and the duality of the mother-child relationship in assessing their own health. Diffusion of innovations contributes to the development of a social marketing framework by offering higher-level theoretical generalizations. This research elaborated on the diffusion of innovations theory in a unique way: by investigating the adopter categories and innovativeness of members of a social system, including the characteristics of members (e.g., cosmopoliteness, communication channel behavior, resources, social status, contact with change agents) and system-level variables (Rogers, 2003, p. 96). Studies of this type classify members of a social system on the basis of their innovativeness, which results in a classification of adopter categories (i.e., innovators, early adopters, early majority, late majority, and laggards). Women's innovativeness (i.e. the degree to which an individual is relatively earlier to adopt new ideas than other members of a social system) was explored in relation to personality values, communication behaviors, system norms, and social networks. Finally, women's perceptions and use of new media, mass media and interpersonal communication channels was explored.

According to Rogers and Storey (1987), the four key components of a campaign include: (1) the expectation of specific outcomes or effects, (2) in a large group of people, (3) over a specific period of time, (4) using an organized set of communication channels. Noar (2006) argued that health communication campaign planners currently operate in an era of conditional effects. There is sufficient evidence to suggest that mass media campaigns produce a small to moderate effect on behavior, however, as a result of the mass media's broad reach, even small changes can create a significant impact on public health problems (Noar, 2006). However, the success of mass media messages is conditional, based on the appropriate implementation of evidence-based theories and strategies in campaigns. Research on campaigns has evolved to reveal five essential components of an effective campaign, include (1) the use of formative evaluation research, (2) the use of theory, (3) segmentation of audiences, (4) targeting of communication channels, (5) tailoring of communication messages, and (5) process and outcome evaluation research (Noar, 2006).

Qualitative research offers a deep understanding of women's lives, circumstances, and aspirations. A strategic social marketing approach investigates behavioral challenges as a whole, rather than focusing on a single behavioral area. In-depth interviews provide insight to understand how biological mothers of newborns make meaning of health. By developing a more complete and holistic understanding and insight into the audience, this study goes beyond a particular issue and related behavior to understand behavior "in the round" before selecting a specific topic or issue to address (French, 2010, p. 125). In this way, potential connections and synergies between different health issues and their related behaviors were identified.

Purpose of Study

The purpose of this study was to explore how biological mothers of newborns make meaning of health. A secondary purpose of this study was to explore how women make meaning of current social marketing campaigns targeting their health. The theoretical goal of this study was to elaborate conceptual opportunities for the integration of diffusion of innovations theory within a social marketing framework. This approach serves to ground the study in a theoretically based process to engage women in understanding and developing solutions to improve their own health and the health of their children and families. This research tears down barriers and provides a space for women to speak for themselves. Specifically, the study explored how women identify their health information needs, including the benefits and barriers of adopting healthy behaviors, and what they say they need to change their behavior, such as reminders, knowledge, skills, and social support. Findings may suggest future approaches to develop a social marketing initiative to empower women to develop and implement long-term solutions to improve their own health and the health of their children and families.

Summary of research questions. This study investigated the following research questions: (1) how do biological mothers of newborns make meaning of health? (2) how do biological mothers of newborns identify their health information needs related to their highest priority health issue? (3) how do biological mothers of newborns make meaning of communication channels regarding their highest priority health issue? (4) how do biological mothers of newborns make meaning of current social marketing campaigns targeting their highest priority health issue? And (5) how can biological mothers of

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newborns be classified into adopter categories (e.g., innovators, early adopters, early majority, late majority, and laggards) regarding their highest priority health issue?

Conceptualizations

 Health communication. Health communication operates at the fundamental core of human experience, connecting health and illness through the body, mind, and society (Babrow & Mattson, 2003). Health communication is an interdisciplinary field that includes a variety of approaches and methodologies. According to *Healthy People 2020*, health communication is the art and technique of informing, influencing, and motivating, individuals, organizations, and audiences regarding a health issue. The scope of health communication includes disease prevention, health promotion, health care quality, health policy, and the business of health care, in order to improve the health and wellness of a community (U.S. Department of Health and Human Services, 2010). In this study, health communication is defined as a matrix of formal and informal messages, in which intended and spontaneous everyday messages abound, in both mediated and interpersonal contexts (Cline, 2003).

 Women's health. This study takes a postmodern approach to women's health by seeking to understand the woman in the body. Power, control, and hegemony serve as regulatory controls of the body and reproduction (Foucault, 1978, p. 139). The body's centrality to the physical process and cultural understandings of reproduction requires investigation of the body as a central feature of analysis. The medicalization of women's bodies provides context for understanding women's experiences of the body and health (Pollock, 1999; Martin, 2001; Kline, 2003). Women's health incorporates a triad of gendered identity: body, sexuality, and otherness (Moran, 2000, p. 432). Women's health

is shaped around reproduction, gender and the body through social and cultural norms, as well as learned behaviors and meanings of the body and female embodiment. This study employs a feminist research perspective, which acknowledges that sex, race, and class intersect in complicated ways (hooks, 1984).

Mothers of newborns. Mothers of newborns provide a unique view of the duality of women's reproductive health. Particularly in the time period following the birth of a child, the health of mother and baby remain inextricably linked. The strong needs of the woman and the baby during this period highlights the dichotomy between the self and other. The postpartum period requires the mother to take care of her own health in order to successfully care for her infant. The importance of personal health and self-care are challenged by the immediate and pressing needs of the baby. In this way, women may overlook their own health needs. Despite the importance of the mother's well-being in the postpartum period, the health care system often relegates women to the role of caretaker.

Social marketing. Social marketing is the overarching conceptual framework for this study. This conceptual framework incorporates insight and best practices for scholarship from a variety of disciplines, including communication and public health (Truss et al., 2010, p. 23). Social marketing is an example of a multidisciplinary whole systems approach to solving social issues (French and Blair-Stevens, 2010). Social marketing provides a framework for planning and implementing social change (Kotler and Zaltman 1971). French and Blair-Stevens (2010) suggest four key components of social marketing: a focus on social good, behavior change, marketing mix, and the audience (p. 34). This study takes a culture-centered approach, which examines the intersections of race, class, and gender by going first to the audience to assess their needs,

values, and beliefs. This approach is a critical component of the social marketing

framework, which emphasizes the importance of avoiding "expert" solutions, and instead

focuses on listening and understanding the audience. A social marketing approach

provides a robust framework for health communication initiatives.

Diffusion of innovations theory. Social marketing lacks a single theoretical

paradigm. A critique among researchers in the field of social marketing is the lack of

theory-based research to guide social marketing initiatives (Lefebvre, 2001; Lopez,

Tolley, Grimes, & Chen-Mok, 2009; Walsh, Rudd, Moeykens, & Moloney, 1993). While

social marketing provides a framework to draw on myriad theories from a host of

disciplines, diffusion of innovations theory emerges as a superior approach to social

marketing and social change (Lefebvre, 2001; Smith, 2004; Moseley, 2004). As a

population-based theory, diffusion of innovations aligns with social marketing's focus on

behavior change in segmented populations. Diffusion of innovations provides a

theoretical framework to understand how mothers of newborns make meaning of their

health. Diffusion of innovations contributes to the development of a social marketing

framework by offering a way to package findings into higher-level theoretical

generalizations (Rogers, 2003).

Adopter categories. Mothers of newborns can be grouped into adopter categories

(e.g., innovators, early adopters, early majority, late majority, and laggards) regarding

issues of health. Socioeconomic characteristics, personality values, and communication

behaviors provide a window to explore these women's innovativeness (i.e. the degree to

which an individual is relatively earlier or later to adopt new ideas than other members of

a social system). Since innovations diffuse through a social system, or network of

individuals with shared social norms, how mothers of newborns perceive their own social networks regarding issues of health can also be investigated. Finally, diffusion of innovations provides a lens to explore women's perceptions and use of new media, mass media and interpersonal communication channels.

Implications of Study

This study suggested applied and theoretical contributions to social marketing, diffusion of innovations theory, and women's health. Findings contributed to research on the duality of the mother-child dyad. The body emerged as a site where women's identity formed in relation to gender and reproduction. Results suggest that mothers of newborns embody and challenge the mother-child dyad in various ways, resist the biomedical paradigm, and envision new ways to interact in their social networks.

While social marketing provides a framework to draw on myriad theories from a host of disciplines, diffusion of innovations emerged as a superior approach because it is a population-based theory (Lefebvre, 2001). This study contributes to the social marketing scholarly body of knowledge by developing the use of a particularly relevant and useful theory. Results indicate that diffusion of innovations theory offers an audience segmentation opportunity based on innovativeness and adopter categories.

Despite the success of diffusion of innovations theory globally, most public health researchers in the United States focus on psychosocial theories of behavior change to guide social marketing initiatives. This study provides evidence for the use of diffusion of innovations theory in the United States. This study moves diffusion of innovations theory forward by applying qualitative methodology to address a number of critiques of diffusion research (e.g., pro-innovation bias, individual-blame bias, source bias).

Finally, the synergy of social marketing and diffusion of innovations theory provides a practical approach to behavior change. Findings suggest opportunities to apply diffusion of innovations theory within a social marketing. In many health communication campaigns based on diffusion of innovations theory, outside experts develop strategies to educate and promote healthy behaviors to the target audience (Singhal, 2010). Although audience research is essential for the development of effective social marketing campaigns, it is rarely allocated the appropriate time or resources and is often left out of the planning process altogether (McVey, Crosier & Christopoulos, 2010). This study engaged women, as the target population, in audience research to elicit their health concerns. These practical suggestions are useful not only to Women & Infants Hospital of Rhode Island, but also to: (1) social marketing and health communication campaign planners, (2) pediatricians, and (3) policy-makers and change agents seeking to improve understandings of women's health and the health of their families or to improve formative research. Ultimately, the findings from this dissertation offer the potential to improve the health and well-being of women and families in Rhode Island and beyond.

Organization of Dissertation

The next chapter outlines the literature that leads to the study's research questions and methodology. The literature review includes three major sections: social marketing, diffusion of innovations theory, and a postmodern approach to women's health. The literature review concludes by explicating the duality of the mother-child dyad and implications for the medical home model, including a specific discussion of audience segmentation.

The third chapter describes the qualitative methods that were used to collect and analyze data. Specifically, a feminist epistemology situates this study as praxis-oriented audience research. Furthermore, the ways that this study addresses critiques of diffusion of innovations methodologies will be discussed. Chapter three will also outline data collection and analysis procedures, including in-depth interviews. Specific topics include: participant recruitment and sampling, informed consent, confidentiality, and compensation for study participants.

Finally, chapter four describes the results of the data analysis. Chapter five discusses the implications of these findings and the conclusions drawn from this research. Tables, figures, and references are listed prior to the Appendices. Appendix A provides the semi-structured in-depth interview guide, Appendix B provides the participant Screening Sheet, Appendix C includes relevant IRB protocols and consent forms, Appendix D links each research question to the appropriate theoretical, conceptual framework and interview questions, and Appendix E provides the participants' biographical profiles.

Chapter 2: Literature Review

This chapter integrates diffusion of innovations theory into a social marketing framework on topics related to the health of women and their families. First, the status of research in the scholarly area of social marketing and its impact on understanding health messages and campaigns will be explored. A brief history of social marketing's history and development, as well as key scholars and current streams of research will detail the evolution of social marketing research. Social marketing will be presented as a systematic, multidisciplinary approach to social change that encompasses best practices in health communication research and practice. Then, diffusion of innovations theory will be described and related to social marketing and women's health. Finally, this section will describe how women's health has been defined and studied, including the social and political implications of the duality of women's health and the mother-child dyad. Health communication campaigns are discussed in each section, relating to social marketing, diffusion of innovations theory, and women's health. This review of the literature leads to five specific research questions to better understand women's health through the framework of social marketing and diffusion of innovations theory.

Social Marketing

Social marketing provides an evidence-based, tested approach for change agents and governments to tackle a range of complex social issues, including individual behavior and macro-level development and social change (Gordon, McDermott, Stead, & K. Angus, 2006). According to government officials in the United Kingdom, "many of today's most important policy issues have a strong behavioral component. From crime and anti-social behavior; to education and health- our behaviors as citizens, parents and

neighbors significantly affect the quality of our lives and that of others" (Cabinet Office Behavioural Insights Team, 2010, p. 4). In the United States, governmental agencies, such as the Centers for Disease Control and Prevention (CDC), and nonprofit organizations, such as the American Legacy Foundation, implement social marketing initiatives, such as the truth® campaign to promote smoking cessation, the VERB™ campaign to increase physical activity (Huhman, Heitzler, & F. Wong, 2004), and initiatives to increase fruit and vegetable consumption, promote breastfeeding, and influence a host of other behaviors (Grier & Bryant, 2005).

Social marketing provides a unifying framework that incorporates insight and best practices for applied scholarship from a variety of disciplines. According to French and Blair-Stevens (2007), "social marketing is the systematic application of marketing, alongside other concepts and techniques, to achieve specific behavioral goals, for a social good" (French, 2010, p. 1). Social marketing is a multidisciplinary field that relies on an open theoretical framework to attempt to solve today's most difficult social challenges, such as poverty, health disparities, climate change, and crime. Kotler and Lee (2009) define social marketing as "a process that applies marketing principles and techniques to create, communicate, and deliver value in order to influence target audience behaviors that benefit society (public health, safety, the environment, and communities) as well as the target audience" (p. 51).

Precursors to the field of social marketing emerged as early as the 1950's, when marketers, particularly Wiebe (1951) asked, "why can't you sell brotherhood and rational thinking like you sell soap?" (p. 679). At this time, modern conceptualizations of marketing diverged from persuading consumers to buy things (they didn't want) to

anticipating and serving customers' needs (Kotler & Levy, 1969). Scholars recognized that the principles of marketing and market research could be used to guide interventions for social good. However, it was not until the 1970's that marketers began to investigate this idea, leading to the creation of the field of social marketing. In the 1980's, social marketing gained attention from the World Bank, the World Health Organization (WHO), and the U.S. Centers for Disease Control and Prevention (CDC) (Kotler & Lee, 2008). These governmental and non-governmental organizations encouraged the use of social marketing to achieve domestic and global social change objectives. After a decade of national and international use of social marketing, researchers moved the field forward with evaluation and renewed focus on rigorous research and audience segmentation (Bloom & Novelli, 1981). At the same time, social marketing emerged as an effective framework for achieving public health goals (Lefebvre & Flora, 1988).

In 2010, social marketing emerged as a framework for behavior change in the *Healthy People 2020* guidelines in the U.S. (U.S. Department of Health and Human Services, 2010). Since 1979, *Healthy People* has defined national health policy by creating and monitoring national health objectives. By including social marketing as a measurable objective in *Healthy People 2020*, U.S. government officials promoted the use of social marketing among departments of health, as well as social change agents in other fields, such as business and public policy.

Principles of social marketing. In 1999, scholars and practitioners founded the Social Marketing Institute to advance the science and practice of social marketing. Alan Andreasen, professor of marketing at Georgetown University served as the executive director. In 2002, Andreasen developed six benchmark criteria to evaluate social

marketing initiatives. These benchmark criteria included: (1) behavior change, (2)

consumer research, (3) segmentation and targeting, (4) marketing mix, (5) exchange, and

(6) competition (Andreasen, 2002). These benchmark criteria were used to improve

social marketing research and practice and to guide meta-analyses and evaluations of

social marketing interventions.

In 2010, French and Blair-Stevens developed evidence-based additions to

Andreasen's (2002) benchmarks, offering eight criteria for social marketing. See Table 1

for a description of French and Blair-Stevens (2010) social marketing benchmark criteria.

French and Blair-Stevens (2010) suggest four key components of social marketing: a

focus on social good, behavior change, marketing techniques, and the audience (p. 34),

which are described below. These criteria reflect social marketing's evidence-based

approach to research and practice. In addition to these benchmarks, prominent scholars in

the field offer a systematic 10-step model[1] for developing a social marketing plan (Kotler

& Lee, 2009).

Social good. The goal of social marketing is to implement behavior change for

social good. According to French and Blair-Stevens (2010), "social marketing's primary

purpose is to achieve a particular 'social or public good' (i.e. there is some benefit to

individual, groups, communities, and society)"(p. 32). The social good should be defined

by target audience members based on their identification of needs and could include

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[1] Kotler and Lee's (2009) 10-step model for developing a comprehensive social marketing plan includes: (1) Background, Purpose, and Focus, (2) Situation Analysis, (3) Segment the Market, and Choose and Describe Target Audiences, (4) Marketing Objectives and Goals, (5) Factors Influencing Adoption of the Behavior, (6) Positioning Statement, (7) Marketing Mix Strategies (Using the Four P's to Create, Communicate, and Deliver Value for the Behavior), (8) Plan for Monitoring and Evaluation, (9) Budget, and (10) Plan for Implementation and Campaign Management.

environmental sustainability, improving public health or reducing health disparities. French and Blair-Stevens (2010) argue, "social marketing is fundamentally a user- or citizen-focused activity that seeks to develop deep contextual understanding about what will help people to choose to behave in ways that will benefit them and wider society" (pp. 42-43).

Marketing mix. The 4 P's of marketing (product, price, place, promotion) remain an essential component of social marketing (Hastings, 2007), but the presence of these strategies alone is not sufficient to define a social marketing initiative (Thackeray, Neiger, & Hanson, 2007). The tools of social marketing include marketing management and applied behavioral science. The 4 P's are one technique that social marketers employ to change behavior (Andreasen, 1994). A social marketing campaign includes a product, which ranges from a tangible product to a service or a piece of information; a price, which may include monetary cost, time, or effort; a place, such as a physical location, phone, or other locations that fit the audience's lifestyle; and promotion, which involve communications designed to elicit action (Kotler & Lee, 2009, p. 196).

Behavior change. Exchange theory forms the foundation of social marketing scholarship and practice. This marketing philosophy requires an exchange to increase benefits and decrease barriers (Rothschild, 1999). In a social marketing framework, it is essential to tailor messages to the audience's unique needs. According to Lefebvre (2011), "social marketing aims for aggregated behavior change – priority segments of the population or markets, not individuals, are the focus" of social marketing programs (p. 55). In addition to exchange theory, a host of behavior change theories and models guide social marketing practitioners. Behavior change theories seek to understand the predictors

of human behavior. Social marketing and health communication campaign planners often pick and choose among a host of behavior change theories and models to develop health messages and design interventions (Maibach et al., 2007; Noar, 2006; Smith, 2004). The most commonly used behavior change models and theories in social marketing include the health belief model, the theory of reasoned action/theory of planned behavior, social cognitive theory, transtheoretical (stages of change) model, and diffusion of innovations (Lefebvre, 2001).

Audience. The field of social marketing continues to differentiate itself from other education, promotion, or communication functions by focusing on the audience. French (2010) argues that the role of social marketing is to provide "services and interventions being driven by a desire to meet citizens' needs and not needs defined solely by experts" (p.4). In addition, government and non-governmental officials may be the audience of a social marketing initiative. Since many behaviors are a function of both individual and societal properties, "social marketing recognizes that policymakers and organizations need to be targeted in order to successfully effect change" (Truss et al., 2010, p. 23). Ultimately, desired behaviors are determined by the audience through formative research. French and Blair-Stevens (2010) argued:

> Social marketing is also a process that can be applied at the most strategic level to refocus the delivery of public service from an overdominance of expert opinion to one that is also informed and shaped by the public's view and what users of public services and interventions say will help them. (pp. 42-43)

Lefebvre and Flora (1988) suggest that social marketing "has the potential of reaching the largest possible group of people at the least cost with the most effective, consumer-

satisfying program" (p. 301). This conclusion is based on an evaluation of the obstacles

that traditional intervention efforts confront, including the limitations of individual

counseling, the difficulty of disseminating health education methods to "hard-to-reach"

groups, and the lack of necessary resources and technology to enact long-lasting behavior

change. Social marketing addresses these challenges by involving the audience in the

planning and execution of behavior change campaigns.

The social marketing approach requires practitioners to incorporate theories from

across disciplines to guide campaigns. The lack of a single theoretical paradigm in social

marketing provides a pragmatic benefit: "social marketing has never claimed to be a

theoretically distinct discipline. In many ways it is better to approach it as a conceptual

framework and a confluence of disciplines, skills, and approaches" (Truss et al., 2010, p.

23). However, a critique among researchers in the field of social marketing is the lack of

theory-based research to guide social marketing initiatives (Lefebvre, 2001; Lopez,

Tolley, Grimes, & Chen-Mok, 2009; Walsh, Rudd, Moeykens, & Moloney, 1993).

Lefebvre (2001) argues that social marketing researchers and professionals possess a

variety of backgrounds and focuses, and as a result, they call upon theories across

disciplines, but only intermittently in their research and practice.

Measuring effects of social marketing. Establishing the effectiveness of social

marketing initiatives presents a number of challenges. Social marketing requires multi-

faceted, multi-component approaches, which makes precise statements of measurable

independent variables difficult (McQueen, 2001). The success of social marketing

campaigns is more likely when "expecting individual change to be related to social norm

change rather than to direct message exposure, and expecting larger changes when new

behaviors fit with the existing pattern of behavior and world view" (Hornik, 1997, p. 56).

Social marketing has been used to address diverse social problems, including poverty

(Kotler & Lee, 2009), health disparities (Thomas, 2009), injury prevention (Smith, 2006),

climate change (Fuller et al., 2010), and crime (Andreasen, 2006). In *Social marketing:*

why should the Devil have all the best tunes? Hastings (2007) describes a number of case

studies illustrating the success of social marketing in criminal justice, road safety,

domestic violence, and health. Other seminal books offer evidence of the effectiveness of

social marketing, including Kotler and Lee's (2008) *Social Marketing: Influencing*

Behaviors for Good and Andreason's (2006) *Social marketing in the 21st Century*.

Early social marketing efforts proved effective in the development goals of

developing countries. In particular, the World Health Organization (WHO) and the World

Bank led successful social marketing initiatives to promote family planning (Truss,

Marshall & Blair-Stevens, 2010). In the United States, Planned Parenthood Federation of

America (PPFA) pioneered a social marketing approach to create social change in

communities around sexual health. PPFA piloted the *Real Life. Real Talk.®* social

marketing campaign in four communities and conducted rigorous, national survey

evaluation, which indicated that the initiative successfully met key objectives, such as

reducing stigma and shame around healthy sexuality and increasing openness,

acceptance, and engagement around sexual health (Brookes et al., 2010).

In developed countries, social marketing initiatives have successfully improved

heart health (Baker, 2002), physical activity (Huhman et al., 2004), mental health

(Donovan & Henley, 2010), and environmental advocacy and awareness (Landers,

Mitchell, Smith, Lehman, & Conner, 2006), among others. For example, after traditional

methods, such as government regulation and education, failed to stall pollution in the largest estuary in the United States in 2005, a social marketing approach succeeded in increasing awareness and changing target behaviors (Landers, Mitchell, Smith, Lehman, & Conner, 2006). The Academy for Educational Development's (AED) social marketing campaign targeted residents of the D.C. metro area, including Virginia and Maryland to "Save the Crabs. Then Eat 'Em." The social marketing approach overcame message fatigue, achieved buy-in from important stakeholders, and successfully altered damaging lawn care behaviors that were destroying the Chesapeake Bay's ecosystem (Landers, Mitchell, Smith, Lehman, & Conner, 2006).

Another example, the Act-Belong-Commit social marketing campaign, successfully promoted positive mental health in Australia (Donovan & Henley, 2010). The campaign addressed mental illness and the need for mental health promotion. The social marketing framework encouraged individuals to develop positive mental health by participating in physical, mental, and social activity (*Act*); by belonging to families and communities through participating in community events (*Belong*); and by committing to challenges or causes that were meaningful to them (*Commit*)(For more information, refer to: http://www.actbelongcommit.org.au/).

In the United States, the CDC coordinated the VERB™ social marketing campaign from 2002-2006. This multicultural program targeted youth ages 9 to 13 to engage in physical activity each day (Huhman et al., 2004). VERB™ exemplified key components of successful social marketing campaigns, including extensive formative research, development of the marketing mix, and community-based solutions. During the

first year of implementation, VERB™ increased weekly physical activity by 34% among children ages 9 to 10 in the United States (Grier & Bryant, 2005).

In 2005, Great Britain's Department of Health and the National Consumer Council commissioned a study to investigate the effectiveness of social marketing as a behavior change approach and to "help realize the full potential of effective social marketing in contributing to national and local efforts to improve health and change behaviors" (NCC and DOH, 2005, p. 4). Three separate reviews evaluated the effectiveness of social marketing interventions tackling substance abuse, physical activity, and nutrition (Gordon et al., 2006). For each of the reviews, interventions were assessed against Andreasen's (2002) six benchmarks of a "genuine" social marketing initiative. Evaluating (1) behavior change, (2) consumer research, (3) segmentation and targeting, (4) marketing mix, (5) exchange, and (6) competition, the results provided strong evidence that social marketing can change behaviors related to substance abuse, physical activity, and nutrition (Gordon et al., 2006).

Situating social marketing in health communication campaigns. Research on social marketing suggests a comprehensive approach to social change that encompasses individual, community, and structural solutions to improve health challenges. Social marketers have relied on a variety of channels to communicate health messages, including mass media, mediated and interpersonal communication, marketing methods, promotion, and community outreach (Evans, 2006, p. 1207). According to Hornik (1997), there are two prominent understandings of behavior change in health communication campaigns:

One focuses on individuals as they improve their knowledge and attitudes and

assumes that individual exposure to messages affects individual behavior. The

complementary model focuses on the process of change in public norms, which

leads to behavior change among social groups. The models contrast direct effects

of seeing mass media materials from indirect effects. (Hornik, 1997, pp. 54-55)

Social marketing assumes a social process of behavior change.

Mass media campaigns may not be highly effective in changing the behavior of

individuals (Noar, 2006). According to Snyder (2001), health communication campaigns

in the United States that use mass media have an average effect size on the target

behavior of about 5 percentage points. Instead, mass media campaigns have been proven

to be effective in the social process of behavior change through such mechanisms as

increasing awareness, knowledge, and information-seeking among audiences (Bratic

Arkin & Doner, 2008). In this way, mass media has an indirect effect on audiences.

Indirect effects can be seen in campaigns related to perceived peer responses to smoking

(Gunther et. al, 2006; Hersey et. al, 2005). A review of notable studies in large

populations, published between 1998-2010 revealed that mass media campaigns

effectively produced positive changes or prevented negative changes in health behaviors.

The successful outcomes of these mass media campaigns were attributed to simultaneous

initiation of community-based programs and supportive public policies (Wakefield,

Loken, & Robert Hornik, 2010, p. 1261).

Indirect effects may also explain the challenge of identifying the impact of public

health communication campaigns on health outcomes. For example, large community

trials, such as The Stanford Five City Project, The Minnesota Heart Health Program, and

the Pawtucket Heart Health Program showed little or no statistical improvement in health behavior because the authors concluded that the controlled trials failed to incorporate a model of influence that reflects a social communication perspective (Hornik, 2002, p. 1). According to Hornik and Yanovitzky (2003):

> Many campaigns' models of effect do not operate on the simple model that exposure will lead to new cognitions and that new cognitions will lead to behavior change among individuals over a short term, even though evaluation designs may act as if that were the only path of effect. Contrarily, effects may operate through social or institutional paths as well as through individual learning; they may require substantial levels of exposure achieved through multiple channels over time; they may take time to accumulate enough change to be detectable; they may produce effects on specific or on generalized outcomes; they may be expected to affect some members of the audience but not others. (p. 222)

Social marketing operates from this social communication perspective, which incorporates strategies to target both direct and indirect effects to improve health behavior.

There are a number of studies that suggest mass media campaigns have more of an effect on cognitions, rather than attitudes or behaviors (on what people think, more than what people say or what they do). In particular, framing research suggests that the way media choose what to include and what aspects to emphasize in a story changes the way that an issue is viewed (Wallack et. al, 1993). For example, mass media misrepresent health issues in a variety of ways, such as incomplete coverage or avoidance of an issue, over- or under- reporting, misrepresentation or juxtaposing competing ideas (Kline,

2003). Ultimately, the way that the media frame stories legitimizes certain ways to think or behave, while delegitimizing alternate thoughts or behaviors (Babrow & Mattson, 2003).

Diffusion of Innovations Theory

Diffusion of innovations theory provides a theoretical framework to understand the process of social change. Diffusion offers relevant principles for a variety of disciplines, such as social psychology, communication, public relations, social marketing, public health, and other fields. Ultimately, this paradigm "allows scholars to repackage their empirical findings in the form of higher-level generalizations of a more theoretical nature" (Rogers, 2003, p. 105).

Key concepts in diffusion of innovations theory. Diffusion is the process by which an innovation, or "new" idea, spreads through certain communication channels over time by members of a social system (Rogers, 2004, p. 13). According to Rogers (2003):

> Diffusion is a kind of social change, defined as the process by which alteration occurs in the structure and function of a social system. When new ideas are invented, diffused, and adopted or rejected, leading to certain consequences, social change occurs. (p. 6)

The diffusion of new ideas, whether they are adopted or rejected, results in consequences that lead to social change. Scholars identify four key factors that guide the theory: (1) an innovation, (2) communication channels, (3) time, and (4) social systems (Haider & Kreps, 2004), which are described below.

Innovation. An innovation is conceived of as a new idea, new knowledge, or a new product or invention. According to Rogers (2003) "the innovation-decision process is essentially an information-seeking and information-processing activity in which an individual is motivated to reduce uncertainty about the advantages and disadvantages of the innovation" (p. 14). In order to reduce uncertainty about most technologies, individuals must understand the *hardware*, or the physical product and the *software*, or the knowledge of how and why the product works (Rogers, 2003, p. 36).

Diffusion of innovations theory suggests that behavior change is a process, rather than a one-time event. The stages in the innovation-decision process include the *knowledge stage*, *persuasion stage*, *decision stage*, *implementation stage*, and *confirmation stage* (Rogers, 2003, p. 199). In the knowledge stage, individuals learn about an innovation, remember the information about an innovation, and possess the knowledge or skills necessary to adopt the innovation. In the persuasion stage, individuals discuss the innovation with others, accept the innovation, and support the innovation behavior. In the decision stage, individuals intend to seek additional information about the innovation and plan to try the innovation. In the implementation stage, individuals acquire additional information and use the innovation on a regular basis. In the confirmation stage, individuals recognize the benefits of using the innovation, integrate the innovation into their daily routine, and promote the innovation to others. These stages roughly mirror the transtheoretical (stages of change) model developed by Prochaska, DiClemente, and Norcross (1992), which includes precontemplation, contemplation, preparation, action, and maintenance.

The perceived attributes that determine the spread of an innovation include the degree of: (1) relative advantage of the innovation over previous ideas or products; (2) compatibility with existing values, past experiences, and needs; (3) complexity or perceived difficulty to understand and use; (4) trialability, or the ability to try out the product or idea for a limited time, and (5) observability, or the ability to see others engage in the new behavior.

Communication channels. An innovation spreads over communication channels, which include (1) mass media channels and (2) interpersonal communication channels. Complementary to social marketing research, diffusion of innovations theory acknowledges that mass media provides the opportunity to reach the largest number of individuals in the shortest amount of time to create *awareness-knowledge* of an innovation (Rogers, 2003, p. 18). According to Haider and Kreps (2004), mass media continue to serve as an integral component of diffusion of innovations theory in the practice of health promotion related to health awareness, education, decisions, practices, and care.

Interpersonal communication channels provide a more persuasive means of diffusing an innovation, such that "the heart of the diffusion process consists of the modeling and imitation by potential adopters of their network partners who have previously adopted" (Rogers, 2003, p. 19). Interpersonal communication drives the diffusion process by creating a critical mass of adopters. Heterophily, when audience members differ in important characteristics, presents a challenge for diffusion of innovations, because communication among heterophilous individuals may not be effective. Innovations diffuse more rapidly among homophilous audiences, in which

members share important characteristics, such as demographics and psychographics. However, homophily presents a barrier to the diffusion of an innovation because it limits the adoption to similar, insulated segments of the population. Ideally, the diffusion of an innovation through a social network occurs between members who are similar regarding most characteristics (e.g, socioeconomic status, education, income, etc.) yet differ regarding attributes related to the innovation. To further explicate this tension, Granovetter's (1973) theory of "the strength-of-weak-ties" explains how weak ties serve as bridge links between homophilous groups (Granovetter, 1973). Heterophily is an essential component of the diffusion of an innovation where "low-proximity weak ties are often heterophilous, which is why they are so important in the diffusion process" (Rogers, 2003, p. 340).

The introduction of new media challenges scholars to redefine the relationship between mass media and interpersonal communication in diffusion of innovations theory. In 2003, Rogers asked, "is communication via the Internet more like mass media communication or interpersonal communication?" (p. 215). New communication technologies are often grouped together as new media. New media encompasses electronic mass media and social media. Social media (e.g., social networking sites such as Facebook) offers opportunities for multi-vocal collaborations among individuals and organizations. According Lefebvre (2007), new technologies signal a communication revolution founded on "using media in new ways NOT using new media" (p. 32).

According to Green, et al. (2009), studies of diffusion need to integrate mass media, interpersonal communication and social media. Specifically, researchers should determine which forms of media, including new media, are most relevant to adoption in

order to better understand the interaction of various communication channels in the diffusion process (Meyer, 2004). Valente and Fosados (2006) suggested the importance of integrating mass media, interpersonal communication and social networks to encourage behaviors that reduce the spread of sexually transmitted diseases (STDs) and HIV.

According to Rogers (2003), the Internet has the potential to increase the rate of adoption for certain innovations. Through a mass media content analysis of blogs, Hogg, Lomicky and Hossain (2008) were able to identify the knowledge stage in the diffusion of an innovation. Smith (2010) found that Twitter served as a powerful new platform on the Internet, which was used to diffuse information about the H1N1 vaccination. Dearing and Kreuter (2010) hypothesized that social media such as Facebook, Twitter and YouTube will serve as "pull media," in which consumers pull the content that is relevant to them. These studies suggest the importance of understanding the role of new media in conjunction with mass media and interpersonal communication in diffusion of innovations theory.

Time. The adoption of an innovation through a social system is determined by the *innovation-decision process* whereby an individual learns about a new idea, forms an attitude about the innovation, decides to reject or adopt, implements the innovation, and finally confirms this decision. The rate of adoption is impacted by the perceived attributes of an innovation, as well as the type of innovation-decision, communication channels, and the social system.

Members of the social system are classified into *adopter categories* based on *innovativeness*. Innovativeness describes "the degree to which an individual is relatively

earlier in adopting new ideas than other members of a system" (Rogers, 2003, p. 297).

Beyond knowledge, awareness, and attitudes, innovativeness predicts behavior change, which is the purpose of diffusion campaigns (Rogers, 2003, p. 268). In other words, "innovativeness is the bottom-line behavior in the diffusion process" (Rogers, 2003, p. 268).

An innovation spreads over time to five adopter categories: (1) innovators, (2) early adopters, (3) early majority, (4) late majority and (5) laggards. These adopter categories tend to follow a normal S-shaped distribution curve over time. Characteristics of adopter categories differ based on socioeconomic status, personality values, and communication behavior. *Innovators* are defined by their venturesomeness and willingness to accept risk and uncertainty, which requires financial resources, literacy and higher levels of education. *Early adopters* are respected by the local social system and maintain the highest degree of opinion leadership, often helping to trigger the critical mass when they adopt an innovation. The *early majority* comprise one-third of all members of a social system and generally deliberate for some time before adopting an innovation. The *late majority* maintain relatively scarce resources and approach innovations with skepticism and caution, adopting only after social norms dictate the necessity of the new idea. With limited financial resources, *laggards* maintain traditional values and approach innovations with extreme caution and suspicion, almost to the point of isolation, these localites demand certainty of success before adopting (Rogers, 2003, pp. 282-287).

Social system. Innovations diffuse through a social system, or network of individuals with shared social norms. Two key actors in the social system include opinion

leaders and change agents. These actors may aid the diffusion of an innovation or stall its spread. Opinion leaders are members of the social system who are able to influence the behavior of others in the system. Opinion leaders may be *polymorphic*, influential on a variety of topics, or *monomorphic*, leader on only one topic. Opinion leaders conform closely to the norms of the social system, however they differ from the rest of the social system in a number of ways. Opinion leaders have greater social participation, more exposure to mass media, increased contact with change agents, and tend to be more cosmopolite with higher socioeconomic status than other members of the system (Rogers, 2003, pp. 316-319).

Change agents are campaign managers, such as social marketers, who work on behalf of a change agency to influence *clients'* innovation-decisions. Change agents maintain *competence credibility* in social systems when they are perceived as knowledgeable experts. While change agents typically exist outside of the social system, *aides* share certain characteristics with clients, allowing a degree of homophily, which helps to bridge the trustworthy or *safety credibility* gap. Successful change agents work closely with aides and opinion leaders to diffuse innovations. Ideally, change agents work with clients to identify problems and develop innovations that address these needs. Change agents' success in adoption of new ideas requires a client orientation, rather than a change agency orientation.

Change agents are responsible for the consequences or changes in a social system after adoption of an innovation. As a result, change agents should be careful to avoid committing an "empty vessels fallacy," which assumes that potential adopters are blank slates (Rogers, 2003, p. 254). In this way, change agents may be able to determine the

form and function of an innovation in a social system, but not the meaning of the new idea, which may be reinterpreted based on past experiences. While change agents may not be able to fully anticipate the consequences of diffusion of an innovation, three dimensions of potential consequences emerge as consideration points: (1) desirable versus undesirable, (2) direct versus indirect, and (3) anticipated versus unanticipated.

The inequality of an innovation's consequences occurs because individuals who would most benefit from an innovation are usually the last to adopt a new idea. According to Rogers (2003), "this paradoxical relationship between innovativeness and need for the benefits of an innovation tends to widen socioeconomic gaps between the higher-and-lower-socioeconomic individuals in a system" (p. 295). Change agents can address the *innovativeness/needs paradox* by implementing an audience segmentation strategy of *greatest resistance*, by focusing on the lowest socioeconomic status subaudiences, with the greatest need for the innovation, who would generally be the slowest adopters. The Internet, new media, and particularly mobile interventions provide an empirically tested method to target health messages among hard-to-reach subaudiences (Rogers, 2003).

Diffusion of innovations and social marketing in women's health. Social marketing is a conceptual framework, which requires the incorporation of a congruent theoretical perspective to plan and implement social change. The literature suggests an opportunity for the intersection of social marketing and diffusion of innovations concepts. Specifically, four key concepts in social marketing (e.g., social good, marketing mix, behavior change, and audience) may be operationalized through the investigation of four key concepts in diffusion of innovations theory (e.g., innovation, communication

channels, social system, and adopter categories). The integration of these concepts is described below.

French and Blair-Stevens (2010) suggest four key components of social marketing: a focus on social good, marketing mix, behavior change, and the audience (p. 34). According to Rogers (2003), an innovation, which is conceived of as a new idea, new knowledge, or a new product or invention diffuses through communication channels in a social system. Members of the social system are classified into *adopter categories*: (1) innovators, (2) early adopters, (3) early majority, (4) late majority and (5) laggards. These adopter categories tend to follow a normal S-shaped distribution curve over time.

Dearing, Maibach, and Buller (2006) argued that diffusion of innovations theory's emphasis on relationships and social marketing's transactional focus could be integrated to improve the use of best practices in health promotion interventions. There are a number of places where social marketing and diffusion of innovations may intersect. For example, in social marketing, public health may be a potential social good. In diffusion of innovations theory, public health interventions are most often viewed as preventive innovations. In this way, the social good in social marketing and the innovation in diffusion of innovations theory may (although not always) be viewed as complimentary concepts. In diffusion of innovations theory, an innovation is assessed based on relative advantage, compatibility, trialability, and observability. The marketing mix in social marketing, particularly the concept of promotion, benefits from the explication of communication channels in diffusion of innovations theory (i.e., mass media, new media, and interpersonal communication).

Social marketing emphasizes behavior change with a focus on exchange theory, including benefits, barriers, and competition. Diffusion of innovations theory offers complimentary concepts, such as incentives, which mirrors the concept of benefits in social marketing. In addition, diffusion offers a unique focus on social systems and relationships (e.g., opinion leaders, social networks, and system norms). Ultimately, social marketing suggests that insight into the audience builds the foundation for audience segmentation. Diffusion of innovations theory offers one way to segment audiences (i.e. adopter categories: innovators, early adopters, early majority, late majority, and laggards) based on understanding the audience's socioeconomic characteristics, personality values, and communication behaviors.

Social marketing campaigns employing diffusion of innovations theory depend on excellent audience research. According to Dearing and Kreuter (2010), designers must be listeners, in order to facilitate a consumer-oriented approach, in which:

> researchers clearly identify groups of potential adopters, learn as much as possible about them, actively engage them in substantive ways throughout the development process, shape the innovation around their needs and interests, and constantly adapt and improve the innovation based on user experiences. (p.S105)

Involving the target population in the design of an innovation, such as a product or service, ensures that the innovation is needed and will be more likely to diffuse quickly and sustain longer. For example, Farr and Ames (2008) conducted a formative evaluation using diffusion of innovations theory to improve medically underserved children's access to health care and discovered the opportunity to develop a community-wide children's health collaborative.

The pace of diffusion relates directly to five attributes of the innovation, including (1) relative advantage, (2) compatibility, (3) complexity, (4) trialability, and (5) observability. These attributes have been shown to be particularly applicable to public health interventions (Haider & Kreps, 2004; Rogers, 1995). Bertrand (2004) found that HIV/AIDS prevention campaigns provide an exemplar study of how these attributes can impact the rate of diffusion of a public health initiative. Dearing (2004) argued that people adopt an innovation based on three factors, including: (1) what they think about the innovation, (2) what they think others think about the innovation, and (3) what they think of an innovation compared to other innovations (p. 26).

The diffusion of innovations theoretical framework has been applied successfully to a variety of public health issues, including reproductive health (Barker, 2004; Fajans, Simmons, & Ghiron, 2006), HIV/AIDS (Bertrand, 2004), children's health (Farr & Ames, 2008), and the 1980's STOP AIDS program in San Francisco (Rogers, 2004). The theory of diffusion of innovations has also been credited with the success of family planning programs in developing countries (Murphy, 2004a; Rogers et al., 1999; Vaughan & Rogers, 2000).

Despite the success of diffusion of innovations theory globally, most public health researchers in the United States focus on psychosocial theories of behavior change (Murphy, 2004; Bertrand, 2004), such as the health belief model, the theory of reasoned action/theory of planned behavior, social cognitive theory, and the transtheoretical (stages of change) model. While each of these theories contributes to understandings of audiences and behavior change, some scholars (e.g., Lefebvre, 2001; Smith, 2004; Moseley, 2004) suggest that the diffusion of innovations theory offers a superior

interactional theoretical framework. Campaign planners do not frequently employ diffusion of innovations theory because it does not describe how to persuade individuals to change their behavior. While social marketing provides a framework to draw on myriad theories from a host of disciplines, diffusion of innovations emerges as a superior approach because it is a population-based theory (Lefebvre, 2001). In other words, diffusion of innovations theory does not focus on individual behavior change. Instead, diffusion of innovations aligns with social marketing's focus on behavior change in segmented populations, as opposed to individuals. According to Rogers (1995), "the main applications of social marketing are to change behavior in directions desired by individuals who are impeded by inertia or other resistances" (p. 83).

According to Bertrand (2004), diffusion of innovations theory will play an increasingly important role in behavior change campaigns as the field of public health evolves away from a focus on individual behavior and embraces the importance of social norms. Originally, Rogers understood diffusion as a linear process, however, current research favors a two-way communication approach (Dearing, 2004; Taylor and Perry, 2005). The application of diffusion of innovations theory may include agenda setting, health literacy, the role of new media technology, and entertainment education. Moseley (2004) suggested that diffusion of innovations research evolved away from linear models:

> The diffusion of innovation framework has also evolved and expanded theoretically, from early models of communication process that tended to be linear and ''individual,'' to more interactive models of communication in which participants create and share information to arrive at mutual understandings of new values, new concepts, and new practices. (p. 149)

Dearing, Maibach, and Buller (2006) argued that diffusion of innovations theory's emphasis on relationships and social marketing's transactional focus could be integrated to improve the use of best practices in health promotion interventions. Although "both approaches have traditionally been conceptualized as top-down, center-to-periphery, centralized efforts at social change," the convergence of social marketing and diffusion of innovations theory offers a set of interactive principles to improve evidence-based practice (Dearing, Maibach & Buller, p.S11).

Smith (2004) suggested the importance of including diffusion of innovations theory in the development of a modern synthesis of social change integrating individual, community, and structural approaches. The Centers for Disease Control and Prevention (CDC) social marketing campaign, *Prevention IS Care*, which encourages physicians to promote HIV prevention, successfully incorporated diffusion of innovations and social cognitive theory into the social marketing framework. Diffusion of innovations theory facilitated physician adoption of the innovation's target behaviors, including communicating HIV prevention messages during routine office visits and increasing identification of HIV transmission behaviors among HIV-infected patients (Fraze, Rivera-Trudeau, & McElroy, 2007).

In many health communication campaigns based on diffusion of innovations theory, outside experts develop strategies to educate and promote healthy behaviors to the target audience (Singhal, 2010). Social marketing provides an alternative approach to diffusing behaviors where desired health behaviors emerge by listening to the target audience. Based on the audience's needs, social marketing managers work with audience members to develop a model of change. Singhal (2010) described the positive deviance

(PD) approach to diffusing health behaviors, whereby the community leads the discovery of new ideas and target behaviors spread organically through the audience. The application of the PD approach to diffusion of innovations, which mirrors the social marketing philosophy, successfully reduced hospital-acquired infections in U.S. hospitals (Singhal, 2010).

Kincaid (2004) explored the adoption of contraception in Bangladesh and expanded diffusion of innovations theory to include the concept of bounded normative influence in a social network, which is "the tendency of social norms to influence behavior within relatively bounded, local subgroups of a social system rather than the system as a whole" (p. 38). When the diffusion of an innovation requires the alteration of existing social and cultural norms, the process of bounded normative influence suggests that initial adopters, or "positive deviants" can influence majority opinion through local social and communication structures (Kincaid, 2004, p. 53).

Green, et al. (2009) called for more participatory approaches to diffusion of innovations theory research. According to Smith (2004), diffusion of innovations provides a comprehensive, powerful theory to influence social change. AED spearheaded the social marketing initiative *LINKAGES*, guided by diffusion of innovations theory to improve breastfeeding practices in Ghana. Through education, policy-making, curricular development in allied health schools, social networking, and changing community norms, *LINKAGES* improved exclusive breastfeeding practices in six months (Smith, 2004).

Go Sun Smart, a worksite wellness program funded by the National Cancer Institute demonstrated the effectiveness of diffusion of innovations theory in a social marketing intervention aimed at reducing the risk of skin cancer among employees. The

theory-driven intervention incorporated formative audience research to diffuse sun smart

behaviors at over 300 ski resorts in North America. This worksite sun safety program

included written and visual messages, electronic resources, and interpersonal

communication channels to promote sun-safe practices among employees. Empirical

evaluation between 2000-2002 indicated that *Go Sun Smart* successfully reduced

sunburning among employees by increasing awareness of sun safety and sun smart

behaviors, such as using sunscreen and lip balm, wearing hats and sunglasses, and

seeking shade (Scott et al., 2008).

Diffusion of innovations theory allows for the use and influence of both

interpersonal and mass media approaches to behavior change, providing an opportunity to

merge with social marketing. Murphy (2004) found that the diffusion of family planning

has been successful in developing countries through mass media, community education

programs, and health care provider training. Social marketing played an important role in

this diffusion by promoting new family planning methods through the local and mass

media, and working with pharmacies and vendors to distribute the products (Murphy,

2004). Barker (2004) found that diffusion of innovations is most effective when sources

of information are regarded as trusted and highly credible.

Diffusion of innovations theory provides a population-based approach to explore

how women make meaning of their health and the duality of the mother-child

relationship in assessing their own health. Diffusion of innovations contributes to the

development of a social marketing framework by offering higher-level theoretical

generalizations. This study explored social marketing's concept of a social good in terms

of public health, which may be defined as a "preventive innovation" in diffusion of

innovations theory. Diffusion of innovations theory explicates the marketing mix (i.e. product, price, place, and promotion) by providing a lens to explore women's perceptions and use of new media, mass media and interpersonal communication channels. Since innovations diffuse through a social system, or network of individuals with shared social norms, how mothers of newborns perceive their own social networks regarding issues of health can also be investigated. An understanding of the social system contributes to social marketing's focus on behavior change (e.g., exchange theory, benefits, barriers, competition, etc.). To gain insight and segment audiences (social marketing), mothers of newborns can be grouped into diffusion of innovation's adopter categories (e.g., innovators, early adopters, early majority, late majority, and laggards) regarding issues of health. Socioeconomic characteristics, personality values, and communication behaviors provide a window to explore these women's innovativeness (i.e. the degree to which an individual is relatively earlier or later to adopt new ideas than other members of a social system).

The Woman in the Body: A Postmodern Approach to Women's Health

> The woman you call the mother of the child
>
> is not the parent, just a nurse to the seed,
>
> the new-sown seed that grows and swells inside her.
>
> The man is the source of life- the one who mounts.
>
> She, like a stranger for a stranger, keeps
>
> the shoot alive unless god hurts the roots.
>
> (Aeschylus, Eumenides, 658-61)

In a postmodern context, the body is not an object but rather the medium through which human beings experience the world. The unwarranted distinction or separation of the body as something owned, operated, or in any way outside of the self infringes on understandings of the self. According to Sartre, "I *am* my body, not that I *have* a body" (Moran, 2000, p. 389). This distinction is significant for research into current perceptions of the body and the self. The personal distinction between self and body allows societal norms around the female body to prevail. According to Moran (2000), "Sartre's account of the non-presence of self to self is an important forerunner of Derrida's conception of différance" (p. 390). Derrida's concept of différance reflects the French verb différér, which means both "to differ" and "to defer." That concept permeates the notion of self and the "other" with meaning both of difference and deference, particularly in the case of subgroups to the dominant cultural group, which exercises hegemony. Within this power dynamic, women might reclaim their bodies and empower themselves culturally through the singular action of personifying themselves and their bodies as one.

Merleau-Ponty describes the dialectic of the body, sexuality, and otherness as a philosophy of embodiment (Moran, 2000, p. 432). Women's reproductive health focuses on this triad of gendered identity: body, sexuality, and otherness. In particular, the discussion of the body as more than the sum of its parts can be aptly applied to the medicalization and pathologizing of women's bodies. William Hunter (1774) illustrated the *Anatomy of the Human Gravid Uterus,* which featured a pregnant woman's open, dismembered torso showing the fetus (complete with a head of hair). This graphic depiction of the pregnant woman and fetus provides a picture of the medicalization of pregnancy. By displaying the pregnant woman as simply a uterus, the illustration

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suggests that the woman is not more than the sum of her parts. Merleau-Ponty argued that "understanding an organism in its interaction with its environment rules out treating it as a thing with *partes extra partes* (parts outside parts), rather its behavior should be understood as part of an 'embodied dialectic' radiating over its milieu" (Moran, 2000, p. 414).

The current research substantiates the need for further inquiry into the social constructs that contribute to the understanding of the female body. The study of biological mothers of newborns has significance for the overall study of gender and the body as well as the specific inquiry into women's health. Mothers of newborns provide a unique view of the duality of women's reproductive health. Particularly in the time period following the birth of a child, the health of mother and baby remain inextricably linked. The strong needs of the woman and the baby during this period highlights the dichotomy between the self and other.

Bio-politics and cultural critique of the body. Foucault (1978) introduced the concept of biopolitics, which revealed the power and control that governments and the economy exert over the body and reproduction. According to Foucault (1978), bio-power was "an indispensable element in the development of capitalism; the latter would not have been possible without the controlled insertion of bodies into the machinery of production and the adjustment of the phenomena of population to economic processes" (p. 140-141). In *The Consumer Society*, Baudrillard (1970) argues that the body must be liberated within capitalism in order to be exploited. Once the body is emancipated as an object, individuals become consumers of their own bodies. In this way, capitalism invades the bodies and souls of individuals.

Even sexuality is offered for consumption (Baudrillard, 1970). According to Foucault (1978), the emergence of sexual repression and control of the body corresponds to the growth of capitalism and the initiation of bourgeois hegemony (p. 5; p. 125). Through moral imperatives and systematic campaigns, the state constructed sexuality and reproduction as a planned economic and political behavior, which served to replenish the labor supply, guarantee population growth, and maintain social control (Foucault, 1978, p. 26; p. 37).

Power, control, and hegemony serve as regulatory controls in the bio-politics of the population (Foucault, 1978, p. 139). According to Foucault (1978):

> If the development of the great instruments of the state, as institutions of power, ensured the maintenance of production relations, the rudiments of anatomo- and bio-politics, created in the eighteenth century as techniques of power present at every level of the social body and utilized by very diverse institutions (the family and the army, schools and the police, individual medicine and the administration of collective bodies) operated in the sphere of economic processes, their development, and the forces working to sustain them. (p. 141)

As a result of bio-politics, the physiology of reproduction was medicalized through the "hysterization of women's bodies" in which, "the feminine body was analyzed – qualified and disqualified- as being thoroughly saturated with sexuality; whereby it was integrated into the sphere of medical practices, by reason of a pathology intrinsic to it" (p. 104).

Reproductive health is the marker of women's oppression. The ability of women to control their bodies is the quintessential battle of personal and political power.

According to Minh-ha (1989), "the Body, the most visible difference between men and women, the only one to offer a secure ground for those who seek the permanent, the feminine 'nature' and 'essence,' remains thereby the safest basis for racist and sexist ideologies" (Minh-ha, 1989, p. 100). According to Cirksena and Cuklanz (1992), "postmodern feminists describe the body as a "site" at which important identity-forming yet contradictory experiences occur" (p. 35). Steeves (1987) reinforces this idea, "radical feminism argues that control over women's reproduction processes is the major vehicle for sustaining patriarchy" (p.97).

According to Minh-ha (1989), "language is one of the most complex forms of subjugation, being at the same time the locus of power and unconscious servility. With each sign that gives language its shape lies a stereotype of which I/i am both the manipulator and the manipulated" (p. 52). This problem stems from reproductive health and women's experience of their bodies. Although we have some understanding of these issues, more research needs to be done to analyze reproductive health and discover relationships of power and control. Although a number of scholars have successfully analyzed reproduction, there is still much work to be done to empower women and to end women's unequal social position.

(Re)writing the body. The discourse surrounding reproduction, gender and the body emphasizes the significance of social and cultural norms, as well as learned behaviors and meanings of the body and female embodiment. Through cultural norms and language, women's identity is challenged throughout the life course. The medicalization and pathologizing of women's bodies is sometimes reinforced through programs designed to empower women, such as Title X, which provides comprehensive

access to contraceptive services and information, through which young women learn that the "responsible" way to "control" their bodies is through contraception. Girls are educated, empowered, and guided toward safe sex, in order to prevent sexually transmitted infections and pregnancy. This dual responsibility gives young women the impression that they can control their bodies by avoiding pregnancy.

Throughout their lives, women experience a fragmented self in their responsibility to prevent pregnancy, and perhaps later, through their desire for a pregnancy. The transition from preventing pregnancy to creating pregnancy is often wrought with anxiety and uneasiness because this change requires a fundamental challenge to self-identity. In this way, women experience a fragmented identity: who they were when they successfully prevented pregnancy, and a new self that is in some ways defined by a biological, reproductive role. In these terms, in the social structure created for girls and women, the act of pregnancy, by definition, requires the relinquishing of control. Pregnant women literally experience "the existence of an inner life," which in many ways denies the validity of a personal self-identity. Societal norms dictate that pregnant women change their behavior: no drinking, no smoking, and no caffeine. At the end of the journey of a planned pregnancy, women's identity is split yet again, as she becomes a "mother."

The first known use of the term pregnant emerged in the 14th century, derived from Middle English and originally from the Latin *praegnant-* and *praegnans*, meaning to carry a fetus, which is an alteration of *praegnas*, from *prae-* pre- and *-gnas* (akin to *gignere* to give birth to)(Merriam-Webster, 2003, p. 979). In other words, pregnancy means "before giving birth to." It is a temporary state, which exists for the sole purpose

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of "giving birth to." This understanding of pregnancy leaves a fundamental question unanswered: "giving birth to" whom? The subject of this sentence is notably absent, reinforcing the fundamental tension between self and identity in pregnancy.

Sevón (2005) illustrates that the timing of motherhood represents social and cultural narratives around "good" mothering and a "reasonable" female life course. Female gender roles and identity, particularly for heterosexual females that are married, are bound by the social norms that dictate when and how "good" pregnancies occur. The decision to become pregnant, then, becomes a reflection of the female's heterosexual relationship and her "duties" therein (Sevón, 2005).

Warren and Brewis (2004) concur with the social constructed phenomenon, arguing that pregnancy represents a body episode that reveals the Western idea of control over the body (Warren & Brewis, 2004). The uniqueness of the female experience in pregnancy breaks with the pervasive perception that women have control over their body and should conform to the cultural stereotypes of womanhood and beauty. This "body episode" presents frustration for women who are unable to relinquish that perception of control while emancipating other women, for the brief period of pregnancy, to live outside of the cultural expectations for the female body.

Today, the word "pregnant" can be defined in a number of ways, including the normative definition, "containing a developing embryo, fetus, or unborn offspring within the body," but also "having possibilities of development or consequence," "involving important issues," "rich in significance or implication," and even "abounding in fancy, wit, or resourcefulness" (Merriam-Webster, 2003, p. 979). These definitions imply that through pregnancy and the bearing of heirs, women achieve richness of significance.

Furthermore, the feminine qualities of fancy, wit, and resourcefulness are associated with pregnancy. In this way, women achieve their full societal possibility and cultural importance through reproducing.

  The wandering womb. The body's centrality to the physical process and cultural understanding of reproduction requires investigation of the body as a central feature of analysis. Ettorre (2000) uses the body as the point of analysis and theorizes on reproductive genetics, arguing that reproductive genetics obscures the role of the environment and gendered social practices in the identification of "defective genes," which exist in a context of the medicalization of health and illness (Ettorre, 2000). This interpretation of the pathologized female body in pregnancy as a reflection of the gendered social practices and the pursuit of a genetic normal underlines the relationship of social norms surrounding gender and the body with the physical and biological constructs of the body.

  The father of modern medicine, Hippocrates and the ancient philosophers Aristotle and Plato played a distinctive role in current societal norms and values surrounding gender and the body. Aristotle believed in the essential inferiority of the female: "'a woman is, as it were, an infertile man. She is female in fact on account of a kind of inadequacy' (Generation of animals 728a)" (Blundell, 1995, p. 106). Woman's inadequacy stemmed from her ability to reproduce, and one specific body part: her uterus or womb.

  According to Blundell (1995), the "ideological interpretation of a women's illness in ancient Greece: the restlessness of the womb is suggestive of a basic physiological instability to which a woman inevitably falls victim unless a man intervenes in her life"

(p. 101). This instability causes a variety of ailments, which may only be cured through pregnancy. In this way, reproduction serves as both the disease and the cure. The restlessness of the womb causes illness by wandering around the body:

> A graphic account of its cause is supplied by one of the characters in a dialogue by Plato, who tells us that the womb is an animal within a woman, which is desirous of bearing children (Timaeus 91). If this desire remains unsatisfied for a long time, the womb becomes restless and starts to wander about the body; as a consequence, the passages for breath become blocked, and this causes distress and "disorders of all kinds." The problem will continue until the woman has sex with a man and becomes pregnant. (Blundell, 1995, p. 100)

The restlessness of the womb confines women to their reproductive role.

The wandering womb can be traced through contemporary ideology in the political and social institutions that essentialize women and reduce them to their biological function. In 1963, Friedan identified "the problem that has no name" as the feminine mystique, which suggested that women should be happy fulfilling their biological roles as housewives and mothers (Friedan, 2001). Friedan's critique of functionalism ushered in second-wave feminism in the United States. The legacy of the wandering womb and functionalism on women's lives served to quiet women's voices. Martin (2001) conducted a cultural analysis of reproduction, what she calls "a feminist analysis of science" (p. xxii). Martin (2001) explored the ways that a diverse group of American women understand and make meaning of reproductive health (e.g., menstruation, childbirth, and menopause) in the context of culture and the biomedical model.

Pollock (1999) conducted a cultural analysis of women's bodies in the context of pregnancy and childbirth. Pollock (1999) revealed established medical discourse and the ways that women resist these cultural norms. According to Pollock (1999), "Given the opportunity, women made what is typically left to the margins of birth discourse- the mother's body, prenatal deaths, sex, conception, genetic counseling- the primary subjects of their birth stories" (p. 7). Reducing women to their biological role has served to marginalize women's stories and lived bodily experiences, especially in relation to pregnancy and reproduction. According to Pollock (1999), birth stories:

> (Re)produce maternal subjects. They rehearse the body politics at the heart of debates over reproductive technologies, genetic engineering, abortion rights, welfare reform, and custody law, signifying a contest for control over the meaning and value of giving birth of which they are, in turn, a vital part. (p.1)

In fact, most birth stories are inculcated through prenatal classes and popular media to reflect prevailing cultural norms in which "planning becomes conception becomes pregnancy becomes a ten-fingers-and-toes birth- "nine months and counting" model of birth storytelling" (Pollock, 1999, p. 4). These stories, reproduced by women themselves, subjugate the self in favor of a linear, medicalized discourse that covers over and conceals the body.

The medicalization of women's bodies provides context for understanding women's experiences of the body and health. Pollock (1999) defines medicalization as:

> The process by which medical and technical expertise overtook not only both ends of life, birth and death, but changed the way we understand our bodies,

making them objects of abstract, anatomical knowledge systems, largely

unintelligible except by clinical translation. (p. 11)

According to Kline (2006), "bodily states have been steadily medicalized so that natural

processes are reduced to states of illness (i.e., pregnancy or menopause)" (p. 46). In this

way, the wandering womb institutionalized the medicalization of women's bodies.

The empty vase. Aristotle described women as an empty vessel. According to

Blundell (1995), the "notion of the mother as a mere vessel for carrying the embryo may

have occurred in the main on the level of popular belief. Its principal authoritative

support is to be found in the work of Aristotle" (p. 106). The notion of women as an

empty vessel reduces women to their biological, reproductive role. In this view, women

are essentialized and valued only in their ability to reproduce. As an empty vessel,

women exist only to be filled.

This metaphor persisted and is reflected in modern society in the popular

television show *Friends*. In the episode, "The One With All the Jealousy," Monica's

boyfriend writes a poem entitled, "The Empty Vase." In the poem, he describes all

women as empty vases: "My vessel so empty with nothing inside. Now that I've touched

you, you seem emptier still" (Abrams & Benson, 1997). Even in contemporary U.S.

popular culture, complicated understandings of women's functional role in society

emerge, which essentialize women's bodies.

As a vessel for future generations, women's bodies have been the source of

centuries of medical attention. Hippocratic writers describe the ancient practice of

fertility tests:

For example, in Aphorisms 5.59, the recommended method is to wrap the woman up in a cloak and to burn incense beneath her. If the smell of the incense seems to pass right through her body and can be detected in her mouth and nose, then she is capable of conceiving; otherwise, she is not. Like the belief in the therapeutic effects of intercourse, this test relies on the notion that the ideal woman is an empty vessel, whose internal space is unobstructed and available for the occupation of men and babies. (Blundell, 1995, p. 105)

These tests foreshadow modern interpretations of infertility. Bute (2009) engaged the issue of peer-to-peer female interaction with a focus on conversations concerning infertility. Women who have experienced problems with fertility are often asked for information about infertility, which suggests that conversational partners struggle with the nature of this interaction and women require enhanced discursive techniques to enable the interaction to produce positive results (Bute, 2009).

The importance of reproduction is reflected in the struggles of infertility. When the Hippocratic remedies for infertility failed, women in ancient Greece relied on other means to fulfill their reproductive role:

If all else failed, then a desperate woman might have recourse to the black market in babies, at least if the comic playwright Aristophanes is to be believed. In a catalogue of crafty dodges perpetrated by women, one example cited is that of a woman who had to keep up a sham labour for ten days while the midwife was looking for a suitable child. Eventually a baby was brought home concealed in a jar; the husband was hurried out of the room, the beeswax which had been used to

stop the baby's mouth was removed, the baby cried, and everyone was delighted

(Thesmophoriazusae 502-18). (Blundell, 1995, p. 106)

Today, women experiencing infertility seek assisted reproductive technology and

adoption. These techniques are mirrored in the Hippocratic infertility remedies and the

black market, to which women in ancient Greece turned.

Approaches to infertility and reproduction reflect societal norms. Bute and Jensen

(2010) examined the norms of fertility and pregnancy among low-income women to

compare and contrast 'mainstream' societal norms. The findings suggest that while peer

oriented norms and subgroup expectations inform perception of fertility and the body,

these norms generally correspond with mainstream descriptive norms (Bute & Jensen,

2010). This finding is notable for demonstrating the commonalities of perceptions among

subgroups while also describing the more insular process of the formation of those

perceptions, which leaves the possibility that norms could diverge and health-related

behaviors affected by targeting peer-to-peer education in subpopulations.

Understandings of the body in a health campaign. Social expectations about

reproduction define and limit women's reproductive role, often dictating women's

understanding of their bodies. The dichotomy of outside and inside subtly emerges in the

dialectic of women's reproductive health. According to Bachelard (1994), "outside and

inside form a dialectic of division, the obvious geometry of which blinds us as soon as we

bring it into play in metaphorical domains. It has the sharpness of yes and no, which

decides everything" (p. 211). One recent example of the dichotomy of outside and inside;

yes and no; is the CDC's Folic Acid Campaign (CDC, 2011). This campaign asks

women, "are you able to get pregnant?" and instructs them to plan accordingly. In this

way, the CDC's Folic Acid campaign is geared toward all women of reproductive age. All women of reproductive age, from first menstruation through menopause, are encouraged to take folic acid supplements each day. Pregnant women have long been advised to take folic acid, because it helps prevent neural tube disorders.

The campaign purposefully disregards the fact that women can consume too much folic acid. In fact, research suggests that women who take a folic acid supplement often exceed the daily limit because many foods, such as breakfast cereals, are already fortified with folic acid (Drake & Colditz, 2009). Too much folic acid can mask B-12 deficiency and serious health issues. Emerging research has suggested that increased folic acid may be linked to certain cancers (Ebbing, et. al, 2009). Although the benefits may outweigh the costs among pregnant women and those planning to become pregnant, the folic acid campaign reduces women to their reproductive capability.

The outside/inside division is evident in the target population of the campaign. Instead of targeting women who plan to become pregnant, the campaign encourages "women who are able to get pregnant" to take folic acid. Even women who are not planning to become pregnant and are using contraception are emphatically encouraged to take folic acid because "half of all pregnancies in the United States are not planned." It seems that the logical campaign strategy to prevent neural tube defects resulting from unplanned pregnancies is to reduce unplanned pregnancies. Furthermore, this line of reasoning suggests that once a woman finds herself in a position of an unplanned pregnancy, the only option is to have a baby.

The danger of campaigns that reduce women to a biological, reproductive function is that this outside/inside, yes/no division blinds us to the fact that this campaign,

which is aimed at women, is not about women's health. This campaign is not about improving women's health. This campaign is about preventing neural tube defects in *potential* fetuses. The campaign literature tells women that they aren't smart enough to prevent pregnancy: after all, half of all pregnancies are unplanned. The campaign creates an inside/outside dichotomy of women who are able to get pregnant (or those who aren't aware of infertility) and women who are not able to get pregnant. The campaign does not even consider that there might women who don't want to get pregnant now (or ever). In other words, the only women who matter are the ones who will get pregnant.

Duality of mother-child dyad. The mother-child dyad provides a unique view of the duality of women's reproductive health. Particularly in the time period following the birth of a child, the health of mother and baby remain inextricably linked. The strong needs of the woman and the baby during this period highlights the dichotomy between the self and other. The postpartum period requires the mother to take care of her own health in order to successfully care for her infant. The importance of personal health and self-care are challenged by the immediate and pressing needs of the baby. In this way, women may overlook their own health needs. Despite the importance of the mother's well-being in the postpartum period, the health care system often relegates women to the role of caretaker. Although women often complete numerous appointments with pediatricians during the first months of a baby's life, mothers often fail to receive the health care services that they need (Iams, E. F. Donovan, Rose, & Prasad, 2011). Iams, et. al (2011) suggest that although obstetricians and pediatricians share the goal of health for both mother and baby, miscommunication between providers may result in poor outcomes.

Family pediatrics and the medical home model. Public health practitioners

suggest a move toward pediatric family-centered services to address the health needs of

mothers and babies (Brehaut et al., 2009). In the mother-child dyad, although

pediatricians focus on the health care of the baby, experts argue that they should also be

involved in the screening and referral of women's health needs. In this way, the baby

serves as an opportunity to address important health needs of the mother.

The delivery of family-centered pediatrics is an important component of the

pediatric medical home (Bair-Merritt et al., 2008). Approximately half of children in the

U.S. have access to all components of a pediatric medical home, which includes family-

centered care (Strickland, J. R. Jones, Ghandour, Kogan, & Newacheck, 2011). The

opportunity for pediatric intervention to recognize mother's health issues is well

documented. Pediatricians routinely screen for intimate partner violence and domestic

violence occurring in the child's home (Bair-Merritt et al., 2008). Pediatric practices also

incorporate recognition and management of maternal postpartum depression (Chaudron,

Szilagyi, Campbell, Mounts, & McInerny, 2007; Earls & The Committee on

Psychosocial Aspects of Child and Family Health, 2010; Kuehn, 2011).

There is also an opportunity for pediatric intervention to improve the mother's

health. Studies show the importance of pediatric support for breastfeeding to improve the

health of both mother and baby (Carney & Bruce, 2011; Ertem, Votto, & Leventhal,

2001; Kramer et al., 2008). Pediatricians can use the birth of an infant as a teachable

moment to play a crucial role in supporting mothers' smoking cessation efforts (Polanska

& Hanke, 2011). Even postpartum hospital stays offer a feasible and effective

opportunity for pediatricians to address parent's smoking habits (Winickoff et al., 2010).

The medical home model is essential because studies show that the health of the mother impacts the child's health in a number of health outcome areas. Mother's dental health correlates directly to child's dental health (Dye, Vargas, & J. J. Lee, 2011). Maternal mental health and depression impact a variety of physical health indicators in children, such as behavior (Frech & Kimbro, 2011; Giles, Davies, Whitrow, Warin, & Moore, 2011) and asthma (Shalowitz et al., 2006). Pediatricians are an underused resource to target parenting stress and maternal depression to prevent negative health outcomes in children (Heneghan, Mercer, & DeLeone, 2004). A recent study on diet and physical activity showed that the better the parent's health habits in these areas, the better able they were to model healthful behavior for children (Berge, Larson, Bauer, & Neumark-Sztainer, 2011).

The pediatric medical home is also essential for women's health because the health of children impacts the caregiver's health. In a recent study, caregivers of children with health problems had twice the odds of having poorer health or chronic conditions themselves (Brehaut et al., 2009). Since pediatricians treat infants and small children on a frequent basis, family pediatrics and the medical home model offer a unique opportunity to address new mother's health issues.

Segmenting diverse publics. Williams and Kumanyika (2002) argued that social marketing serves as an important tool to reduce health disparities among diverse populations. Specifically, effective social marketers employ a cultural lens and emphasize the opinions, perceptions, and priorities of the target population (Williams & Kumanyika, 2002). Dutta (2007) described culture as a collection of values, beliefs, and practices that are shared in a community. Hornik and Ramirez (2006) suggested that segmenting

audiences by culture and race/ethnicity is an imperative for health campaign planners because of the salience of great health disparities. Although Hornik and Ramirez (2006) did not suggest a "correct" way to segment audiences on the basis of race/ethnicity, they argued that communicators are obligated to consider race and ethnicity as we seek to understand our audiences, and that without this component, we cannot fully understand our audience. Scott, Gilliam, and Braxton (2005) further explicate the importance of segmenting audiences by race, ethnicity, and culture. They suggest that it is important to conduct culturally centered audience research. For example, in Hispanic cultures, the concept of "machismo" is a central construct that must be understood in order to plan an effective campaign. Campaign planners might understand this concept in a positive manner by targeting male heads of households as protectors of their families.

Dutta-Bergman (2005) described the challenge of segmenting audiences by culture/race/ethnicity. In their work on leprosy, Melkote, et. al (2008) argued that it is essential to not only understand the audience, but to start with the audience. They argue that many of our approaches and theories dictate the appropriate intervention based on expert knowledge, while campaign planners should be starting directly with the audience to understand their issues and problems. Specifically, they suggested that health communication campaigns are often guided by a culturally-sensitive approach, which focuses on translating materials into the appropriate language or making changes to "fit" a specific culture. Dutta (2007) described the importance of taking a culturally-centered approach. More than just recognizing and being sensitive to culture, a culture-centered approach goes first to the audience to assess their needs, values, and beliefs. This approach is a critical component of social marketing campaigns, which emphasize the

importance of avoiding the "expert" solution, and instead focuses on listening and understanding the audience.

bell hooks (1984) argued, "there is much evidence substantiating the reality that race and class identity creates differences in quality of life, social status, and lifestyle that take precedence over the common experience women share- differences which are rarely transcended" (p.4). She argues that sex, race, and class oppression intersect in complicated ways. Smith (1988) also addresses the struggle of difference and the challenge of intersectionality, "in political struggles, there wouldn't be any 'your' and 'my' issues, if we saw each form of oppression as integrally linked to the others" (p. 77).

A culture-centered approach to health communication research and practice is paramount in developing appropriate health communication campaigns in diverse audiences. Street (2003) suggested that a social and environmental context to health communication research moves away from tendencies to blame the individual (victim blaming) for poor health or illness, and allows the refinement of social and environmental solutions to health problems.

According to Dutta (2007), the goal should be to build "theory from below" and to give a voice to the voiceless. Health communication researchers must understand the importance of subalternity, or populations that are beneath or erased. Ford and Yep (2003) suggested that the goal of health promotion should be empowerment. Medicalization and the social construction of illness serves to marginalize groups based on a variety of factors. Marginalization serves to trivialize, de-authorize, and "other" certain groups of people. The goal of health communication should be to shed light on

this patriarchal, hierarchical system in order to emphasize caring and responsibility for others (Ford & Yep, 2003).

Research Questions

The purpose of this study was to explore how biological mothers of newborns made meaning of health by understanding their highest priority health issue. A secondary purpose of this study was to explore how women make meaning of current social marketing campaigns targeting their health. The theoretical goal of this study was to elaborate conceptual opportunities for the integration of diffusion of innovations theory within a social marketing framework. Based on the review of literature and theory regarding social marketing, diffusion of innovations theory, and women's health, the following research questions emerged to guide this study. (Please see Appendix D, which links each research question to their theoretical framework and to the corresponding interview questions.)

RQ1: How do biological mothers of newborns make meaning of health?

RQ1.1: How do women define their highest priority health issue, both for themselves and for their newborn?

RQ1.2: What motivates women to adopt healthy behaviors and what barriers keep women from adopting healthy behaviors related to their highest priority health issue?

RQ1.3: What do women say will help them adopt healthy behaviors related to their highest priority health issue? (e.g., reminders, knowledge, skills, social support)

The first research question investigates the four key components of social marketing, including social good, marketing mix, behavior change, and audience insight (French & Blair-Stevens, 2010). This question elucidated participants' perceptions of social good and more specifically, uncovered their highest priority health issue. Drawing from social marketing's basis in exchange theory, the benefits and barriers related to the highest priority health issue area were explored. Finally, the marketing mix (product, price, place, and promotion) was identified as participants described what will help them adopt healthy behaviors related to their highest priority health issues.

RQ2: How do biological mothers of newborns identify their health information needs related to their highest priority health issue?

Research question two builds on the first research question by narrowly focusing on social marketing's marketing mix, specifically related to product, place, and promotion.

RQ3: How do biological mothers of newborns make meaning of communication channels regarding their highest priority health issue?

RQ3.1: How do biological mothers of newborns use communication channels (new media, mass media and interpersonal communication channels) regarding their highest priority health issue?

RQ3.2: How do biological mothers of newborns perceive their own social systems regarding their highest priority health issue?

Research question three provides an opportunity to better understand the intersection between social marketing and diffusion of innovations theory. Communication channels are an essential component of diffusion theory and play a

prominent role in the social marketing mix (promotion). This study sought to understand how participants use new media, mass media, and interpersonal communication channels regarding their highest priority issue. Furthermore, system-level variables in diffusion of innovations theory were explored by asking about participants' perceptions of their own social networks related to their highest priority health issue.

RQ4: How do biological mothers of newborns make meaning of current social marketing campaigns targeting their highest priority health issue?

Research question four investigated how participants interpreted current social marketing campaigns. This question provided a concrete example to explore a real-world campaign and to further explicate the opportunity for the intersection of social marketing and diffusion of innovations theory.

RQ5: How can biological mothers of newborns be classified into adopter categories (e.g., innovators, early adopters, early majority, late majority, and laggards) regarding their highest priority health issue?

RQ5.1: How are biological mothers of newborns' socioeconomic characteristics related to their innovativeness (i.e. the degree to which an individual is relatively earlier or later to adopt new ideas than other members of a social system) regarding their highest priority health issue?

RQ5.2: How are biological mothers of newborns' personality values related to their innovativeness regarding their highest priority health issue?

RQ5.3: How are biological mothers of newborns' communication behaviors related to their innovativeness regarding their highest priority health issue?

Finally, research question five applied diffusion of innovations theory's adopter categories to participants' highest priority health issue. This question also provided an opportunity to explore the intersection of social marketing and diffusion of innovations theory by applying adopter categories as an audience segmentation technique. In order to classify participants into these categories, participants' innovativeness, including cosmopoliteness, communication channel behavior, resources, social status, and contact with change agents was assessed. Furthermore, segmentation was also conducted on the basis of socioeconomic characteristics (e.g., age, formal education, literacy, self-perceived identification with a social class, etc.), personality values (e.g., empathy, dogmatism, rationality, intelligence, attitudes toward change, etc.), and communication behaviors (e.g., social participation, interconnectedness, contact with change agents, exposure to mass media, etc).

Chapter 3: Method

In-depth interviews were used to collect and analyze data. Specifically, 44 in-depth interviews with mothers of newborns provided insight into how these individuals made meaning of their health. A feminist research perspective situated this study as praxis-oriented audience research to uncover new mother's health needs within a social marketing framework.

Qualitative methodology is essential for gaining a richer, detailed understanding of women's understandings of their own health and their health information needs. Since most diffusion of innovations research uses quantitative methodology, this study responds to a call for the use of qualitative methods (Meyer, 2004; Vaughan & Rogers, 2000) to gain in-depth knowledge of how participants understand their health. Specifics of the epistemology, research methodology, procedures, analysis and validity are discussed in this section.

Feminist Epistemology

A feminist research perspective acknowledges the fundamental inequality of women and strives to create social change. According to Lather (1991), "very simply, to do feminist research is to put the social construction of gender at the center of one's inquiry" (p. 71). According to Armstead (1995): "the starting point of feminist research is: Gender is not simply a variable among others in society. Rather, to feminists, gender is an organizing principle of our society – one which subordinates women to men" (p. 627-628). Cirksena and Cuklanz (1992) suggest that feminist research ultimately seeks to understand and overcome the subjugation of women.

Feminist standpoint epistemology emerged in the 1970's and 1980's as a way to challenge the ideological basis of existing knowledge and power. Standpoint theory suggests that all research is historically, contextually and politically situated in a particular place and time. In other words, the view from each perspective is unique (Harding, 2004). The goal of feminist standpoint epistemology is to give voice to the voiceless and provide a view from below. Although there are many definitions of feminist epistemology, three key characteristics are integral to the study of health communication and social marketing: (1) the importance of women's lives, experiences, and point-of-view, (2) power and the researched-researcher relationship and (3) praxis. Each of these domains are critical to the study of women's health.

Women's lives. Feminist scholars are guided by the overarching belief that women's lives, experiences, and point-of-view or standpoint are important. According to Reinharz (1992), feminist researchers "repudiate the idea of a social reality "out there" independent of the observer. Rather, they think that social research should be guided by a constructivist framework in which researchers acknowledge that they interpret and define reality" (p.46). As a result, women's lives and experiences become essential to the work of feminist researchers.

Feminist researchers provide a window to the personal experiences of women by exploring feelings and experiences in a purposeful way. Dorothy E. Smith (2004) described the way women are assimilated in the world and limited by existing constructs:

> …there is a difficulty first then of a disjunction between how women find and
> experience the world beginning (though not necessarily ending up) from their

place and the concepts and theoretical schemes available to think about it in.

(p.22)

As a result, women's point-of-view or standpoint is critical in uncovering their experience.

Researcher-researched relationship. In addition to valuing the experience and voices of women, feminist research is influenced by relationships. According to Reinharz (1992), feminist research involves the researcher as a person and encourages the researcher to develop a special relationship to the participants in the study. Feminist research addresses the hierarchy inherent in the researcher-researched relationship. According to Mies (1983), the goal of feminist research is to move beyond neutrality in favor of conscious partiality, which replaces the vertical relationship between the researched and the researcher with a view from below. Although power differentials cannot always be overcome in research, feminist methods acknowledge the issue and find opportunities to lessen the impact of imbalance. According to some feminist researchers, "self-disclosure initiates *true dialogue* by allowing participants to become *co-researchers*" (Reinharz, 1992). Other ways that feminist researchers validate relationships include "woman-to-woman" talk, closeness, and reciprocated nurturing.

Avoiding the trap of "essentialism" requires humility and a willingness to understand the perspective of others. Pratt (1988) suggests that, "part of this process, for me, has been to acknowledge to myself that there are things that I do not know…to try to fill up the emptiness of my ignorance about the lives of Jewish women and women of color" (p. 42). A real solution to the problems women face in the U.S. related to

reproductive health requires that researchers acknowledge their privileged position and abandon their assumptions about solutions to reproductive health problems.

Feminist research, including the necessity of problematizing the power relations between researcher and researched offers the hope of a new solution to the study of women's health. According to Lather (1991):

> To abandon crusading rhetoric and begin to think outside of a framework which sees the "Other" as the problem for which they are the solution is to shift the role of critical intellectuals from universalizing spokespersons to cultural workers who do what they can to lift the barriers which prevent people from speaking for themselves. (p. 47)

In this way, feminist epistemology also contributes to the social marketing approach by moving away from interventions and campaigns based on the views of the expert and privileging the thoughts and needs of the women in the community.

Praxis. According to van Zoonen (1994), feminist research involves the politicization of qualitative research both internally and externally. Internally, feminist research is concerned with the power dynamic inherent in research and seeks to correct the imbalance between the researcher and the researched. Externally, feminist research is concerned with fulfilling the goals of the feminist movement, which involve emancipatory action. Feminist researchers' emphasis on relationships leads to action. According to Lather (1992):

> I [engage in] feminist efforts to empower through empirical research designs which maximize a dialogic, dialectically educative encounter between researcher and researched…What I suggest is that our intent more consciously be to use our

research to help participants understand and change their situations (Reinharz, 1992, p. 175).

Reinharz (1992) reinforces this perspective, "feminist scholarship is inherently linked to action. The purpose of feminist research must be to create new relationships, better laws, and improved institutions" (p. 175). This approach to research and action reflects the goal of social marketing to create social change.

Feminist research involves more than studying gender. According to Lather (1991), "the overt ideological goal of feminist research in the human sciences is to correct both the invisibility and distortion of female experience in ways relevant to ending women's unequal social position" (p. 71). Scholars describe this impetus of feminist research, "action," "praxis," or "empowerment." Feminist researchers employ theory to conduct research that informs practice. A feminist epistemology suggests that research will link academic scholarship and advocacy. The purpose of feminist research is to conduct research that improves women's lives.

Conducting feminist health research. As a feminist, I believe that subjectivity and interpersonal understanding is essential to health research because the biomedical paradigm has sublimated women's ways of knowing. Olesen (1994) reinforces this paradigm in feminist health research: "some of the most skillful work on women's subjectivity and experiences has been done in the area of women's health, in ways that unsettle the frames just mentioned and lead to theoretical or pragmatic consequences" (p. 161). As a result of the subjugation of women's bodies and women's knowledge in health, constructed knowledge becomes an important concept. According to Belenky, et. al (1986), construction:

is the process of sorting out the pieces of the self and of searching for a unique

and authentic voice that women come to the basic insights of constructivist

thought: All knowledge is constructed, and the knower is an intimate part of the

known. (p. 137)

Olesen (1994) problematizes constructed knowledge in the realm of postmodernism.

According to Olesen (1994), "concerned with the difficulties of ever producing more than

a partial story of women's lives in oppressive contexts, postmodernist feminist

researchers regard 'truth' as a destructive illusion" (p. 164). If all knowledge is

constructed, then it is a challenge (if not an impossibility) for feminist researchers,

particularly in the field of health, to identify "truth." However, despite the "destructive

illusion" of truth, as a health researcher, I believe that I must continue to search for paths

to action, a central tenet of feminist research.

One poignant example of the struggle of doing feminist research, particularly in

public health, arises in Audre Lorde's (1979) *An Open Letter to Mary Daly,* in which she

criticizes Daly in her discussion of female genital mutilation (FGM). In the letter,

published in *This Bridge Called My Back* (1983), Lorde argued:

Your inclusion of African genital mutilation was an important and necessary

piece in any consideration of female ecology, and too little has been written about

it. But to imply, however, that all women suffer the same oppression simply

because we are women, is to lose sight of the many varied tools of patriarchy. It is

to ignore how those tools are used by women without awareness against each

other. (p. 95)

As a feminist health researcher, this example reinforces the importance of understanding the audience's values, beliefs, and needs before embarking on a social marketing campaign.

Linking Diffusion of Innovations Theory to Qualitative Methodology

Diffusion of innovations theory offers a population-based approach to explore how mothers of newborns make meaning of their health and the duality of the mother-child relationship in assessing their own health. Women as individual members of a social system serve as the unit of analysis. This approach to diffusion of innovations theory is consistent with 58% of diffusion publications (Rogers, 2003, p. 96), which investigate innovativeness of members of a social system, including the characteristics of members (e.g., cosmopoliteness (or the degree to which an individual is oriented outside a social system), communication channel behavior, resources, social status, contact with change agents) as well as system-level variables. Studies of this type classify members of a social system on the basis of their innovativeness (i.e. the degree to which an individual is relatively earlier to adopt new ideas than other members of a social system), which results in a classification of adopter categories (i.e., innovators, early adopters, early majority, late majority, and laggards).

As a result of the practical applications and the theoretical grounding of diffusion research, critics have argued that there is a pro-innovation bias in diffusion research (Vaughan & Rogers, 2000). The pro-innovation bias assumes that an innovation under study is valuable to the target population and therefore, should be adopted rapidly and "as is" without regard for the individual's needs (Meyer, 2004). In reality, the target population should be empowered to reject or re-invent the intervention based on their

needs. This study avoids the pro-innovation bias by investing in rigorous audience research to better understand the needs of the target population. This study understood health innovations through the perspective of the audience. Practical applications of diffusion of innovations research provide evidence for an individual-blame bias in diffusion research (Vaughan & Rogers, 2000). Because diffusion of innovations researchers believe that an innovation will solve a problem that the target audience faces, when individuals fail to adopt the solution, researchers may blame the individual (Haider & Kreps, 2004). This study combats individual-blame bias by using qualitative research, which deemphasizes individual-blame (Vaughan & Rogers, 2000, p. 124). Countering individual-blame bias provides an opportunity to understand individual behavior change within the context of health problems.

In combination with individual-blame bias, diffusion researchers are susceptible to source bias when they promote interventions envisioned by change agencies rather than the target audience of potential adopters (Vaughan & Rogers, 2000, p. 118). By conducting qualitative research, this study interacted directly with the audience, finding out what was of most concern to them in order to provide recommendations for appropriate change agency partnerships.

Finally, qualitative research provides an appropriate solution to the problem of determining causality in diffusion of innovations research. Cross-sectional survey data cannot provide insight into the many "why" questions regarding the diffusion of innovations (Vaughan & Rogers, 2000, p. 128). According to Dearing (2004), there are few "predictive" diffusion studies that have explored the ways that social change agents might augment the diffusion process prior to the implementation of a campaign. This

study seeks to answer the "how" and "why" questions of diffusion. In this way, this study answers the call to move diffusion of innovations theory forward through the use of qualitative methods (Meyer, 2004).

Audience Research

Qualitative research provides a deep understanding of people's lives, circumstances, and aspirations. Effective social marketing campaigns depend on "insights drawn from looking beyond the immediate health behavior and into peoples' lived experience" (McVey & Walsh, 2010, p. 102). Insight provides a window into the audience's motivations and barriers to change. This study seeks to understand what mothers of newborns know, believe, value, and say will help them by investigating behavioral challenges as a whole, rather than focusing on a single behavioral area. The literature advocates for this type of strategic social marketing approach, however, it is rarely put into practice. As a result, this study identifies potential connections and synergies between different health issues and related behaviors. By developing a more complete and holistic understanding and insight into the audience, this study goes beyond a particular issue and related behavior to understand behavior "in the round" (French, 2010, p. 125). There is also a history of acceptability research as a type of positioning research in diffusion of innovations studies, which investigates the perceived attributes of an ideal innovation in order to create such an innovation (Rogers, 2003, p. 227).

Although audience research is essential for the development of effective social marketing campaigns, it is rarely allocated the appropriate time or resources and is often left out of the planning process altogether (McVey, Crosier & Christopoulos, 2010, p. 226). The TAAG study (Gittelsohn, et. al, 2006) highlights the gap in the literature

related to formative research of audiences, showing it is difficult to find models of how to conduct formative research, particularly in regard to methods, and theories. TAAG describes an extensive plan of formative research to understand the audience, including qualitative and quantitative methods, but relies primarily on quantitative methods. TAAG's formative research provides an understanding of the audience, as well as the audience's perspective on the campaign, even to the level of message design.

Interviewing

Interviews are essential to understand how individuals make meaning of their daily lives. According to Rubin and Rubin (2005), interviews should be a "conversational partnership," where the interviewer can guide the conversation, while allowing new ideas and pertinent directions to emerge. This method of data collection is particularly relevant to this study as a cultural approach to the medicalization of women's bodies:

> Feminist researchers argue that the interviewer and the interviewee should try to build a relationship in which they share responsibility for finding the words and concepts in which the ideas can be expressed and lives described, and by doing so emphasize the importance of issues in which women are deeply engaged. (Rubin & Rubin, 2005, p. 26)

Furthermore, interviewing offers the opportunity to "interweave both the voice of medicine and the voice of the lifeworld into a consistent, mutually agreed upon story that functions as the basis for clinical care and decision-making" (Sharf & Vanderford, 2003, p. 15).

Social marketing scholars suggest that in-depth interviews provide the optimal path to uncover audience insights, such as knowledge, attitudes, beliefs, as well as

thoughts, feelings, and coping strategies (McVey & Walsh, 2010, p. 102). In order to understand the social context of where the audience lives and works:

> Talking to people and 'walking in their space' for a while develops an appreciation of the challenges they face every day. Having this insight and knowledge will help with understanding the audience 'exchange' and building strong message propositions, which will be relevant and salient to the target group. (McVey & Walsh, 2010, p. 119)

Interviews allow researchers to gain a better understanding of how individuals make meaning of themselves, others, and the world around them (Berg 2009).

According to Rubin and Rubin (2005), the interview is about the interviewee and his or her understandings, perceptions, beliefs, and values. Interviews depend on the relationship between the interviewee and the interviewer. The relationship between the interviewee and the interviewer is an important one, if only temporary. As a result, the interviewer must understand his/her own beliefs and even prejudices, to ensure that these biases do not negatively impact the interviewee (Rubin & Rubin, 2005). Furthermore, the interviewee shares personal details about his or her life with the interviewer. Some of these details may even be legally, emotionally, or psychologically damaging to the interviewee. In return, the interviewer owes loyalty and compassion (e.g., Ellis, 1995). Finally, in order to build this conversational partnership, the interviewer must ask open, broad questions to ensure that the interviewee is able to understand the questions and can respond according to his or her interests and comfort-level (Rubin & Rubin, 2005).

The weaknesses of interviews include the potential for bias. Specifically, response bias; bias due to poorly worded questions; the inability of the participant to remember can

cause recall bias; and reflexivity, in which the interviewee says what the interviewer wants to hear (Yin, 2009). Lindlof and Taylor (2010) suggest that qualitative interviews do not depend on the "accuracy" of what participants say; instead, the researcher is interested in how respondents express themselves in the context of the interview.

Letherby (2003) described the difficulties and ambivalences of in-depth interviewing, specifically the struggle to correct the power imbalance between the researcher and the researched. One challenge that interviewers face is the personal stress on the researcher (Reinharz, 1992). Becky Thompson (1990) described her struggle:

> One way I tried to escape the pain of their stories was by interrupting them with comments such as: "I know what you mean" or "I went through a similar thing."…Recognizing psychological consequences of interviewing on the researcher elucidates dilemmas involved in using feminist interviewing techniques…[I had to sort out] when making a comment during an interview is actual support and when it is dysfunctional rescuing…sitting with the pain may be the only response that doesn't cheapen the power of its recounting. (Reinharz, 1992, p. 35)

Yin (2009) suggests that the strengths of interviews include a more targeted, in-depth approach to understanding a topic or issue. This targeted approach leads to insight, in which causal inferences may be explained. According to Reinharz (1992) interviews are an appropriate qualitative methodology in feminist research. Specifically, the use of the term participant, as opposed to subject fulfills the objectives of feminism. Furthermore, the use of feminist research and interviews leads to more open methods that are guided by the research question, not by the methodology. Interviews are the most

appropriate data collection method for this research study because they are aligned with the feminist perspective of uncovering women's subjugated knowledge.

Data Collection Procedures

The Brown University Healthy Communities Initiative provided funding for data collection, including participant incentives and transcription services. Funding from the Brown University Healthy Communities Initiative served as a grant to facilitate completion of data collection for the dissertation project. I was not hired as a consultant or through another mechanism that tied the findings of this project to the organization's mission. The data from this project may inform a future Maternal and Child Health Communication Project and I have provided Brown University and Women & Infants Hospital with white paper summaries of my findings.

Women & Infants Hospital, in collaboration with Brown University, provided access to the study population of mothers of newborns in the maternity inpatient wards for purposes of participant recruitment. The research protocol was reviewed and approved by the Women & Infants Hospital Institutional Review Board (IRB) (Project No: 11-0118). An Institutional Review Board (IRB)/Independent Ethics Committee (IEC) Authorization Agreement was completed between the Women & Infants Hospital Institutional Review Board (IRB) and the Brown University Institutional Review Board (IRB) and the University of Maryland Insitutional Review Board (IRB), respectively. The Institutional Authorization Agreement (IAA) allowed the University of Maryland Institutional Review Board (IRB) to rely on the Women & Infants Hospital Institutional Review Board (IRB) for review and continued oversight of the human subjects research.

See Appendix C for relevant IRB protocol and consent forms, submitted October 31, 2011 and approved December 12, 2011.

Sample: Women in Rhode Island. As the nation's smallest state, Rhode Island is a laboratory for public health interventions. Women in Rhode Island offer a unique opportunity to conduct research in a low mobility culture where over 73% of all births take place at Women & Infants Hospital of Rhode Island. This population provides an excellent segmentation opportunity for a highly targeted social marketing campaign. According to the 2010 census, Rhode Island had 544,167 female residents, which comprised 51.7% of Rhode Island's population. Forty percent of women in Rhode Island are of childbearing age, between 15 and 44 years (U. S. Census Bureau, 2010a). Women of reproductive age face a range of health and wellness challenges, from nutrition and exercise to pregnancy and postpartum depression. The women in this study identified health issues of concern to them and provided suggestions for how and why to address these issues.

Fewer than half of households in Rhode Island (44%) consist of a husband-wife pair and 13.5% of families are female head of household with no husband. While 17% of households include a husband-wife pair and children under 18, female head of household with no husband with a child under eighteen years of age accounts for 7.7% of all households. Almost 9% of households are females under 65 living alone (U. S. Census Bureau, 2010b).

In 2008, there were 12,048 births in Rhode Island and the birth rate was 11.5 births per 1,000, slightly below the national average. Almost 50% of infants were born to white mothers, 21.6% born to Hispanic mothers, 8.4% to African-American mothers, and

4.3% to Asian mothers. Although Rhode Island's racial and ethnic breakdown is approximately 76% white, 12% Hispanic, 5% black, 3% Asian, 3% two or more races, and 0.6% Native American (U. S. Census Bureau, 2010b), birth rate trends in Rhode Island mirror national data with Hispanic and African-American birth rates outpacing white birth rates (The Kaiser Family Foundation, 2008a).

Preterm births and cesarean delivery rates vary by race/ethnicity in Rhode Island. In 2008, 11.2% of all births were preterm births (national average 12.3%), with the African-American and Hispanic preterm birth rates higher than those for white women in Rhode Island. Thirty-three percent of births were by Cesarean delivery. White women (36.2%) had the highest rates of Cesarean delivery while Hispanic women (27.9%) had the lowest (The Kaiser Family Foundation, 2008b).

Women in Rhode Island face barriers to health care. Although 84.5% of women in Rhode Island received prenatal care in the first trimester of pregnancy in 2008, only 75.7% of Hispanic women and 74.2% of African-American women began prenatal care in the first trimester compared with 90% of white women (The Kaiser Family Foundation, 2006).

Women & Infants Hospital of Rhode Island. Women & Infants Hospital of Rhode Island is the premier health resource in southeastern New England for newborn children and women of all ages. More than 73% of all newborns in Rhode Island are delivered at Women & Infants. Women choose to give birth either in one of 19 private rooms or in the hospital's Alternative Birthing Center (ABC), one of only three such centers in New England. The average obstetrical stay in 2010 was 3.26 days.

Women & Infants Hospital of Rhode Island is New England's premier hospital for women and newborns. With more than 9,700 deliveries per year, Women & Infants is the seventh largest obstetrical service in the country. According to a Women & Infants press release (2009), there were 180 births in the Alternative Birthing Center in 2008. The number of births in the Alternative Birthing Center represents a small percentage (less than 2%) of all births at Women & Infants Hospital. It is also the primary teaching affiliate of the Warren Alpert Medical School of Brown University for obstetrics, gynecology, and newborn pediatrics. In 2003, Brown University and Women & Infants were named one of 20 designated National Centers of Excellence in Women's Health by the U.S. Department of Health and Human Services (*Women & Infants Profile*, 2011).

Participant recruitment. All biological mothers who experienced a live birth at Women & Infants Hospital during the study enrollment period of January 10, 2012 through January 27, 2012 were considered eligible for the study. Mothers had to be able to communicate in English to participate in the study. I recruited on the hospital maternity inpatient wards. Formal exclusion criteria included: (1) the mother not living in Rhode Island at the time of the child's birth, (2) cognitive impairment that prevents obtaining consent and answering the study questions, (3) maternal age less than 18 years, (4) serious illness of the newborn such that it would be upsetting to contact the mother, (5) the family is already participating in three or more studies so that an additional study would be a burden. See Table 2 for a complete list of exclusion criteria. Overall, 304 patients were reviewed with 248 (81.6%) screened as eligible for inclusion in the study and 56 (18.4%) deemed ineligible for participation.

The screening form included items in addition to the formal study exclusion criteria (See Appendix B for the screening form with both formal and informal exclusion criteria). It was important to be sensitive to the hospital setting in which the research was conducted. If the nurses were uncomfortable that families in a crisis and would be upset, I respected that concern and did not approach the mother. I worked with the nursing staff to determine this on a case-by-case basis. I worked with the nursing staff to identify what issues led to them feeling that it was not appropriate for families to be contacted. On a number of occasions, nurses requested that I did not approach certain patients because they needed to rest for health reasons, they had an emotional visit with a social worker, or they were simply overwhelmed.

To clarify the process, in addition to the formal exclusion criteria stated in the protocol, mothers were not approached if the mother or child was seriously ill. Mothers were also not approached if the child was in DCYF custody or under a DCYF hold, as again this was a family crisis, as well as having the further complication of the mother possibly not having parental responsibility. The most common reasons for the 56 participants' ineligibility were ability to speak English, state of residence (outside of Rhode Island), and mother's health, with only a few deemed ineligible due to crisis, baby's health, maternal age, and the Alternative Birthing Center. Mothers were also not approached if there was some other family crisis identified and the nursing staff or researcher felt it inappropriate to approach the mother (see Table 2). In contrast to the formal exclusion criteria, these issues may have been in flux during the mother's hospitalization. It is possible that on the first day after birth, the newborn or mother might have been ill and approaching the mother was considered inappropriate. However,

on the second day after birth the situation might have improved and the mother was then considered eligible. It is also possible that the situation persisted and the mother was discharged without being approached. These situations did not occur regularly and did not significantly affect the sample.

Of the 248 eligible participants, 120 were not approached as they were discharged prior to my being able to approach them. There were many reasons that I may have missed potential participants. First, during their stay in the hospital, participants were not always eligible or available for the study due to maternal or infant health. Many mothers posted a "resting: please do not disturb" sign on their door for most of the day. I attempted to vary my time on each of the floors, so that I was on each floor at a different time of day, however, by the time I made it back to some of the floors, potential participants had already been discharged. The duration of hospital stay varied greatly among participants. During this study, I noticed that women who delivered vaginally were usually only in the hospital for 24-48 hours, while women who delivered by Caesarian section stayed for up to four days. This may explain some of the differences in the participant demographics.

I worked closely with nursing staff to ensure that I respected the hospital setting in which my research was conducted. Nursing staff were consulted to learn if any patients did not meet criteria and therefore should not be approached. In addition to talking with the nursing staff, the Women & Infants research staff used the hospital's computer system to pre-determine eligibility. The screen for eligibility allowed the researcher to avoid contacting mothers who were ineligible to participate in the study. Attached is the screening sheet that was used in the screening process (See Appendix B). The paper

screening sheets were destroyed after the data was entered into a password-protected database by certified study personnel.

I was responsible for recruiting patients for this study in collaboration with the Women & Infants Hospital staff. I wore a name badge with picture ID from Women & Infants, and I completed a standard "processing" through Women & Infants Volunteer Services office for clearance to work on the units for the purposes of this study. I began enrolling study participants on January 11th, after IRB approval was obtained and continued enrollment until January 27th. I recruited and consented all participants in-person at the hospital and conducted all interviews, either in-person or over the telephone. Interviewing continued until February 12th when a point of theoretical saturation had been achieved, which included 44 women.

Participant selection. Patient data was reviewed between January 10, 2012 and January 27, 2012. During that time, 5East, 6East, and 6West served as maternity inpatient wards. On these floors, 304 women gave birth at Women & Infants Hospital and were screened for inclusion in the study. Of those 304, 248 (81.6%) met the criteria for inclusion while 56 (18.4%) were excluded from consideration. The most frequent reasons for exclusion were inability to speak English, state of residence (outside of Rhode Island), and serious maternal health issues. Of the 248 women eligible for participation, 128 were approached to be part of the study. Seventy-one mothers of newborns refused participation. Fifty-seven (44.5% of those approached) consented to interviews. Ultimately, 44 mothers of newborns (34.4% of those approached) participated in the study.

Of those interviewed, 20 (45%) delivered by Cesarean section and 24 (55%) delivered vaginally. Participants ranged from 18 to 40 years of age with an average of 29 years of age. Participants ranged from new mothers delivering their first child to the mothers of four children with an average of 1.77 children per woman.

The race/ethnicity of the participants coincided with the state's overall demographics. Of those interviewed, 28 (63.6%) identified as white, 11 (25%) identified as Hispanic, three (6.8%) identified as Black, and two (4.5%) identified as Asian. Educational attainment varied among participants, as well. Only six participants (14%) attained more than a four-year college degree, 13 (30%) earned a four-year degree, nine (20%) had an associate's degree or 'some college,' nine (20%) earned a high school diploma, while seven participants (16%) had less than a high school diploma.

Procedures. The data collection procedure involved conducting 44 in-depth individual interviews. Data collection occurred between January 11th and February 12th. Of the 44 in-depth interviews, 27 took place at Women & Infants Hospital and 17 took place over the telephone. In all, I spent 19 days at Women & Infants Hospital and a total of 157 hours or a little more than eight hours per day "on-site." I conducted an average of 1.4 interviews per day. In practice, this means that my time at the hospital was spent recruiting and consenting participants and/or conducting interviews. The interview lengths ranged from a low of 30 minutes to a high of 90 minutes, with an average interview time of 52.6 minutes.

Ideally, I would have conducted all in-person interviews with mothers of newborns in a protected place and at a protected time. However, it was important to recognize that some mothers of newborns may be particularly fatigued and some women

had visitors and hospital personnel coming in and out of their hospital room. By offering two options to complete the study, I deferred to the participants' preference. Furthermore, I found that "a phone interview can be as intimate and engrossing, and ultimately just as good at getting full responses, as an in-person interview"(Lindlof & Taylor, 2010, p. 190). In addition, phone interviews allowed participants to speak more freely because they had a greater sense of anonymity.

Despite the benefits of telephone interviews, they are limited to verbal communication. In other words, I was unable to analyze body language or non-verbal communication. To avoid a discrepancy in analysis between interviews conducted over the telephone compared with those conducted in-person, I took special care to note any non-verbal cues that occurred during in-person interviews, such as discomfort or trouble answering a question. As this occurred, I eased telephone participants into these questions and probed their responses. I asked them to describe how they were feeling as they answered the question, as a proxy for non-verbal communication. I also took note of verbal tones and inflections that accompanied non-verbal cues, such as nodding the head for emphasis. I took special care throughout the data collection and analysis to determine if there were differences between these two types of interviews. Overall, I did not notice any significant differences in the interviews conducted in-person or over the telephone either in length or quality. In the context of this study, the opportunity to talk with women over the telephone provided access to more robust data and experiences. In particular, I was able to capture women at different stages of the immediate postpartum period to gain a more holistic perspective of women's health needs at this time.

Participants were informed of the researcher's wish to audiotape the interview for purposes of accuracy. Only 12 participants, 27% of the sample, agreed to be audiorecorded. There was a separate consent form for the audiorecording that may have been unduly burdensome to participants, who were often holding their newborn during the informed consent process. Participants gave a number of reasons for declining to be recorded, including being self-conscious about their accent, noting that they did not like the way they sound in recordings, thinking that they might know someone who could listen to these tapes, or simply wondering if it was really necessary. The most frequent response was "can we just skip that part?"

Participants' refusal of recording was surprising because my prior research experience suggested that audiorecording was not problematic. Furthermore, little has been written about audiorecording as a methodological challenge for researchers. This may signal a shift in the way individuals understand and use media. For example, many participants were avid users of social media and this familiarity may lead to increasing concerns regarding the public accessibility of recorded sound. Without the aid of audio for some interviews, I devoted increased attention to taking notes and recording verbatim quotes. This may have decreased my focus from the conversational partnership and may have compromised my ability to ask engaging follow-up and probing questions.

During the interviews, I used the iPad application, SoundNote, created by David Estes. SoundNote tracks what you type and draw while recording audio. During playback, by tapping a word in your notes, SoundNote jumps to the proper time in the audio. I used SoundNote to type notes, handwrite notes with a stylus, and record audio (for those participants who consented to be recorded). I also recorded consenting

participants with a digital audio recorder, as a back-up. SoundNote offered a password-protected application to take notes and write observer comments and memos throughout the data collection process. This application was especially important because so many of my interviews were not recorded and I had to adapt to each participant's room. During some interviews, I could set my iPad on a table and type. During other interviews, such as when participants were sitting in the only guest chair with their newborn, I had to conduct the interview standing up, so I was only able to take handwritten notes. SoundNote helped me to take copious notes and following each interview, I was able to add in as much detail as I could remember, on the same page. SoundNote also facilitated data analysis, allowing me to tap a word in my notes to jump to the proper time in the audio.

All participation was voluntary, and participants were notified that they could withdraw from participation at any time. Participants were given approved consent forms and asked to sign prior to the start of the interview. All participants were informed about the nature of the project, their potential participation, and that participation was voluntary. The research protocol was reviewed and approved by the Women & Infants Hospital Institutional Review Board (IRB) (Project No: 11-0118). An Institutional Review Board (IRB)/Independent Ethics Committee (IEC) Authorization Agreement was completed between the Women & Infants Hospital Institutional Review Board (IRB) and the Brown University Institutional Review Board (IRB) and the University of Maryland Insitutional Review Board (IRB), respectively. The Institutional Authorization Agreement (IAA) allowed the University of Maryland Institutional Review Board (IRB) to rely on the Women & Infants Hospital Institutional Review Board (IRB) for review

and continued oversight of the human subjects research. See Appendix C for relevant IRB protocol and consent forms, submitted October 31, 2011 and approved December 12, 2011.

Interview at Women & Infants Hospital. After obtaining informed consent, the mothers were interviewed. Participants received a $25 gift card to compensate them for their time and efforts in the study. The interview protocol is included in Appendix A.

Telephone interview for mothers who prefer this approach. Mothers who preferred a telephone interview were asked to schedule a date and time for the interview within one week of discharge. The researcher called participants one day prior to the interview as a reminder. If the participant did not participate in her interview as scheduled, the researcher made up to 5 additional call attempts over the course of two weeks in order to reach the participant. The researcher mailed a $25 gift card to compensate participants for their time and efforts in the study. The interview protocol for the telephone interview was the same as the interview protocol for the in-person interview at Women & Infants Hospital.

Interview protocol. This study employed a semi-structured interview protocol, which prepares a list of questions, but allows flexibility for the researcher to change questions during the interview (see Appendix A). According to Rubin and Rubin (2005), it makes little sense to ask the same questions to each participant in qualitative research. In other words, remaining open to the natural flow of the conversation allows participants the freedom to discuss topics and issues that are most important to them.

This study employed Rubin and Rubin's (2005) guide to create an interview protocol based on the following components: (1) main questions, (2) follow-up questions,

(3) probes. Main questions were broad enough that the interviewee would feel comfortable answering these questions based on her knowledge and interests. I used follow-up questions based on the direction and interests of the interviewee. I also prepared a number of probes, which are a technique to keep the conversation moving. Examples of probes include attention probes, elaboration probes, and sequence probes.

I paid particular attention to developing an interview guide that would provide opportunities to build rapport with participants. Rapport creates a foundation for the interviewer and interviewee to successfully communicate with one another by establishing a framework for the exchange of questions and answers. Building rapport creates an environment of respect, which invites self-expression and permission to talk freely (Lindlof & Taylor, 2010). In order to build rapport, participants were first asked general questions about their daily routines, leisure time, personal health, and media use. Then, more specific questions about health were asked, such as "What information do you most need about your own health?" and "Do you read or participate in any online communities or online support groups about health?"

The interview guide explored how women identify their health information needs, including the benefits and barriers of adopting healthy behaviors, and what they say they need to change their behavior, such as reminders, knowledge, skills, and social support. Specifically, the interview guide incorporated French and Blair-Stevens' (2010) four key components of social marketing: social good, behavior change, marketing techniques, and the audience. For example, to assess the audience's values and what they say will help them (social good), I asked, "What are some health issues you think about?" and "What is your biggest health concern?" In order to better understand what motivates

women to adopt healthy behaviors and what barriers keep women from adopting healthy behaviors related to their highest priority health issue, I asked women to describe a time when they adopted a new health behavior, such as a prescription medicine, a medical treatment, a new food or exercise. I asked probing questions, such as "what did you think about when you made that decision? What factors did you consider? Who did you talk with about this decision? And who was most influential as you made this decision?"

Diffusion of innovations theory provided a theoretical foundation to explore how women make meaning of their health. The variables of the diffusion of innovations theory were examined through questions about sources of information, exposure to health messages, barriers to adoption of new health ideas, and social networks. In order to classify mothers of newborns into adopter categories (e.g., innovators, early adopters, early majority, late majority, and laggards) regarding issues of health, I asked questions related to their socioeconomic characteristics, personality values, and communication behaviors. For example, I asked, "where do you hear about different health issues?" and "could you tell me about a time when you discussed a health topic with people in your life?" Finally, women's perceptions and use of new media, mass media and interpersonal communication channels were explored. In order to better understand participants' interpersonal relationships, I asked "What is your relationship with your health care provider like?" Probing questions included, "what role does your health care provider play in your personal health? And what happens if you disagree with your doctor's advice?"

I pre-tested the interview guide with three mothers of infants. These practice interviews provided an opportunity for me to assess the cogency and flow of the

interview questions. I conducted two of these cognitive interviews over the telephone and one in-person. I did not notice any differences between the mothers' responses over the phone compared with the in-person interview. I asked these mothers to explain what each interview question meant to her. In this way, I was able to improve word choice and refine the questions. The pre-test interviews also highlighted gaps in my questions. In particular, one mother suggested that when I ask about text messages, I should add the probe, "Do you have unlimited text messages?" Please see Appendix D, which links each research question to the appropriate theoretical, conceptual framework and to interview questions.

Data Analysis

Analytical techniques from the grounded theory approach provided an inductive method of analysis, which privileges the voices of participants and allows their stories and understandings to emerge (Glaser & Strauss, 1967). Corbin (2008) suggests that grounded theory reflects the social justice aim of feminism in its attempt to bring about social change through practical research that develops pragmatic knowledge. According to Corbin and Strauss (2008), qualitative analysis is a process of examining and interpreting data in order to find meaning, improve understanding, and develop knowledge. Corbin and Strauss (2008) suggest that grounded theory is no longer limited to theory construction. Instead, researchers may apply the analytic techniques and procedures of grounded theory to develop new knowledge without theory building. Furthermore, Corbin and Strauss (2008) make room for researchers to build on an existing program of research and to employ a theoretical framework, which offers insight, direction, and a foundation of concepts to draw from during analysis. In this study, social

marketing and diffusions of innovations theory provide existing conceptual and theoretical constructs to begin data analysis. However, Corbin and Strauss (2008) maintain that qualitative analysis is a process that cannot be rigidly codified. As a result, I remained open to new concepts that emerged from the data.

First, each audio-recorded interview was transcribed. For those interviews that I could not audio-record, I wrote extensive notes during the interview and spent time immediately following the interview filling in gaps from memory. Since some of these interviews were "handwritten" using a stylus, I then typed the notes from each interview, providing another opportunity to fill in gaps. In many cases, through shorthand notations and opportunities to fill in gaps from memory, I was able to record participants' quotes verbatim. In other cases, I relied on paraphrasing and notes, when transcripts were unavailable. In study records, I indicated whether each interview was transcribed verbatim and whether it took place over the phone or in-person. By keeping a careful record of the interview procedures, I was able to assess the strengths and weaknesses of notes compared to transcripts, which is described in detail below.

I maintained an Excel spreadsheet documenting all relevant information regarding the interviews, including when patient data was reviewed, date and time of participant consent, date and time of interview, location of interview (in-person or telephone), relevant demographics, and how the interview was recorded (audio or notes). During data collection and analysis, I frequently read through my notes in SoundNote. I also used SoundNote to record observer comments and memos. Each interview and memo was either typed or transcribed and entered into HyperRESEARCH qualitative analysis software. The use of this computer assisted analysis software offered a number of

benefits for organizing interviews and comparing notes with transcripts. I coded interviews in the same manner, whether they were notes or transcripts. In order to distinguish potential differences in coding, I used a variety of tools in HyperRESEARCH. By running reports, I was able to analyze code frequency, which provided a numeric count of instances of each reported code name for each reported case. In this way, I was able to ensure that I was not privileging transcripts. In addition to numerical data, I used Boolean logic to define selection criteria in order to compare and contrast codes to ensure that there were not significant differences between coding verbatim transcripts and notes.

I used HyperRESEARCH to assist with data analysis. A constant-comparative method was conducted throughout data collection to analyze transcripts (Corbin & Strauss, 2008). I coded the transcripts line-by-line, comparing each transcript against the next for similarities and differences. This process of coding relies on deriving and developing concepts from data (Berg, 2009). According to Corbin and Strauss (2008), open coding allows the researcher to focus on words and meanings, which aids in breaking down data into concepts. I also conducted axial coding, which relates concepts to each other across data. As the researcher identifies conceptually similar incidents, Corbin and Strauss (2008) recommend using in-vivo codes, which privilege the words of research participants. I maintained a code list editor with 83 codes, including demographics. I coded 1795 conceptually unique incidences throughout the interview text.

I employed the conditional/consequential matrix as an analytic device to stimulate contextual interpretation of data based on the broad range of conditions and consequences that determine context (Corbin & Strauss, 2008). I used memos and observer comments

during the data collection and analysis process to maintain reflexivity and to identify emerging concepts (Rubin & Rubin, 2005).

Data collection and analysis continued until a point of theoretical saturation was reached after 44 interviews. Saturation is often interpreted, as "when no new data emerge," however this is an over-simplification of the process. Instead, research should continue until themes emerging from data are fully robust regarding the properties, dimensions, and variations of concepts (Corbin & Strauss, 2008). Rubin and Rubin (2005) describe theoretical saturation as the point at which data accounts for a "universal solution" in which all cases have been considered.

Validity and Reliability

According to Kvale (1995), qualitative researchers must address the trinity of validity, reliability, and generalizability. In quantitative research, validity assesses whether a study investigates what it intends to investigate. Reliability determines whether the study can be repeated with the same results. Generalizability suggests that the results should be able to be generalized to other populations. Since these concepts emerged from a positivist research tradition, some scholars argue that they cannot and should not be applied to qualitative research, while others suggest that using these terms can bolster qualitative methodology in the social sciences (Guest and MacQueen, 2008).

In qualitative research, the researcher becomes the instrument, bringing his or her skills in observing and interpreting to the data-gathering process (Rubin & Rubin, 2005). This perspective presents a challenge to defining the concepts of validity, reliability, and generalizability in qualitative research. According to Hammersley (1990), validity means truth, or how well a description accurately reflects the phenomena of interest. Reliability

may be defined as the importance of documenting procedures and demonstrating

consistency in identifying the same themes and concepts over time and between

researchers (Silverman and Marvasti 2008). According to Miles and Huberman (1994), a

more relevant concept than generalizability is transferability, which suggests that

researchers can transfer findings, assumptions and interpretations from one case to

another case.

According to Kvale (1995), validity is an expression of craftsmanship in a

qualitative research study. This approach emphasizes the quality of research through

checking for credibility, plausibility, and trustworthiness of data. To validate also implies

questioning and theorizing. Kvale (1995) embraces communicative and pragmatic

concept of validity, which emphasize conversations and knowledge that leads to action.

Specifically, researchers improve validity by checking for representativeness,

triangulating data, checking for outliers and extreme cases, looking for negative evidence,

and seeking feedback from participants.

Lather (1991) reframes validity as empirical rigor, which is a more appropriate

measure of praxis-oriented research. Empirical rigor is defined by triangulation, construct

validity, face validity, and catalytic validity. Triangulation establishes data

trustworthiness. Self-reflexivity ensures construct validity by revealing how the

researcher's beliefs and theoretical understandings impact the opportunity for alternative

explanations. Face validity is operationalized through member checks. Respondent

validation is the process of returning to the study's subjects with tentative results and

refining them based on the subjects' reactions (Silverman & Marvasti 2008). A key

challenge in performing member checks is the risk of false consciousness. According to

Lather (1991), false consciousness occurs when individuals' common sense understandings reinforce oppressive dominant ideologies. False consciousness reinforces the importance of hegemony in understanding and analyzing the results of member checks. Finally, catalytic validity is the process of conscientization, in which the research process reveals inequalities to participants and empowers them to transform these power imbalances (Lather, 1991).

According to Corbin and Strauss (2008) quality findings depend on methodological consistency. This study ensures the validity of the data or "quality findings" through methodological awareness and empirical rigor (Silverman & Marvasti, 2008). In order to ensure that findings are valid, qualitative researchers use: reflexivity, depth of description, accuracy, rigor, intellectual honesty, and searching for alternate hypotheses and interpretations (Borkan 1999).

Guest and MacQueen (2008) suggest that the use of raw qualitative data in the form of verbatim quotes is one way to ensure the validity of data. Quotes should be used to define key concepts and themes in order to allow the reader to assess face and content validity of the data. I ensured the validity of the data in the construction of the interview guide. I prevented respondent fatigue by asking the most difficult questions in the middle of the interview, leaving time to warm up and cool down (Rubin & Rubin, 2005). I also included probes, such as elaboration probes or sequence probes, when I felt that I did not fully understand the answer or when I wanted the participant to confirm her answer. This is similar to the survey technique of asking the same question in a different way to ensure the accuracy of answers.

Researcher reflexivity. This study offered a natural progression of my research agenda. My work in women's reproductive health has evolved from an interest in contraception to pregnancy to mothers of newborns. My initial work in women's health focused on contraceptive use dynamics, a topic which I am still passionate about and I believe informed the current study. The article resulting from that research, "Fifty years on "the pill": A qualitative analysis of nondaily contraceptive options" has been accepted for publication in the August 2012 edition of the journal *Contraception*. In another study, I interviewed pregnant women, which provided an improved understanding of pregnant women's body identity, perceptions, and opportunities for empowerment and agency in reproductive health.

As a public health professional, I believe that research should be used to create social change. I attest that behavior is predictable and, as a result, changeable. I believe that the behaviors of people can be studied and that, in response, public health practitioners can develop effective interventions to change the way people act, thereby improving health. Viewing my public health research and practice from a feminist perspective causes me to worry that I may put too much emphasis on the role of the individual in changing his or her behavior. To counter this tendency toward victim blaming, I have sought ways to privilege the voices of the "target population" and to critically analyze the paradigms used in public health research and interventions. My interest in social marketing stems from my belief in behavior change, as well as a concern that interventions begin with *the people* researchers attempt to reach.

As an emerging feminist scholar, my research sits at the intersection of gender and health. In part, my dedication to women's health results from the inequalities of men

and women in medicine, including the idea that research on men can be extrapolated to women. The related issues of power and control in relationships are relevant aspects of my personal interests in health communication. Power and control over women's reproductive health continues to be a salient political issue. I believe in the power of a feminist movement to make change.

Feminist research fills a gap in my own ways of knowing and my approach to women's health. I believe that feminist research contributes to health communication and social marketing frameworks. What is most appealing to me about feminist research is the call to action, the obligation of feminist researchers to use theory to conduct research that informs practice. Bridging academic scholarship and advocacy is not always welcomed on either side of the aisle. It is liberating to conduct research for the purpose of theory development and to improve women's lives. These are some of the beliefs that I bring to conducting feminist health research.

A feminist perspective offers an opportunity to empower women through research designs that use a "dialogic, dialectically educative encounter between researcher and researched" (Reinharz, 1992, p. 175). In other words, the goal of feminist epistemology is to help participants understand and change their situations by giving voice to the voiceless. This research study served as an opportunity for women to talk about health issues important to them. Participants described the realization that they feel silenced by their inability to speak about health issues. Many of these women thanked me for the opportunity to think about and talk about their health. This research empowered participants by providing a protected time and space for these women to discuss their own health needs and opinions.

Wearing the white coat. In a memo dated Sunday, January 29, 2012, I reflected on the time I spent at Women & Infants Hospital. I recalled that I spent many months in the fall of 2011 working with the Hospital to gain access. There were more layers of red tape and bureaucracy than I could have imagined. After one contract, three IRB approvals, four shots, and two doctor's visits, I was finally eligible to receive my badge. This badge allowed me to access Women & Infants Hospital. Whereas all other guests passed through security on a daily basis, I was free to come and go throughout the duration of the study.

I started my time at the Hospital with a full day orientation on December 22, 2011. Since the contract was not yet processed, my second full day orientation was not until January 10, 2012. Then, I was free to start collecting data. In all, I spent 19 days at Women & Infants Hospital and a total of 157 hours or a little more than eight hours per day "on-site." The best time to talk with participants was during the morning, so, I often arrived on the floors before 9 a.m.. I spent a lot of time on my feet, waiting to approach potential participants. During some interviews, such as when participants were sitting in the only guest chair with their newborn, I conducted the interview standing up. I was able to successfully complete interviews of over an hour standing up. However, I recognized that standing up could lead to interviewer fatigue and compromise my ability to ask insightful questions. I debriefed with researchers in the Division of Research, who suggested solutions to such logistical challenges. In future interviews, I proactively identified and asked for a place to sit down. To combat researcher fatigue, I frequently sought respite in the empty family lounges on each floor, to sit down and write memos.

Afternoons in the hospital were busy and interviews were often delayed by visits from nurses, OBs, pediatricians, midwives, lactation consultants, social workers, anesthesiologists, birth certificate procedures, baby's first photo, nutrition services, and housekeeping. Some of these "delays" led to the best interviews, because they built a strong rapport with the participant.

I started each day at the Division of Research at Women & Infants Hospital where I picked up screening forms from a locked cabinet in a locked office in a locked suite. With a list of potential participants in-hand, I made my way to the maternity floors on the other side of the campus. I walked through Hasbro Children's Hospital, Rhode Island Hospital, and an underground tunnel to arrive at the Women & Infants Hospital maternity ward.

The Division of Research loaned me a white coat that all of the researchers in the hospital wore. I wrote a number of memos about the impact of the white coat on the researcher-researched relationship and the power imbalance it created. The white coat allowed me entrance to the hospital and the patients' rooms. If I hadn't been wearing it, I don't think I would have successfully recruited as many participants. Even though the coat said "Division of Research," I wondered what the image of the white coat communicated to participants. During three different interviews, participants answered a call and told their mom, sister, or significant other that they had to go because they were with "the doctor." Although it was probably easier to say this than to explain they were taking part in a research study, it always prompted me to clarify that I was not a doctor. I purposely included the fact that I was a student in my opening statement, to try to

somewhat diminish the power of the white coat. At the same time, the white coat made me feel more comfortable in the hospital setting. It made me feel like I belonged.

Research indicates that the white coat is a strong non-verbal communication device, which evokes confidence, trust and empathy toward the wearer (Chung, et al., 2012). A recent study suggested that wearing the white coat not only exerts power over others, this article of clothing impacts the psychological and behavioral processes of the wearer. Adam and Galinsky (2012) found that the symbolic meaning of the white coat and the physical experience of wearing it influenced how individuals thought, felt, and acted. This research offered an "enclothed cognition" perspective, in which individuals wearing the doctor's white coat completed tasks with more attention than others (Adam & Galinsky, 2012). This research reflects my experience wearing this symbolic article of clothing. I titled a memo dated January 12, 2012, "it's hard to feel bad about yourself when you wear a white coat."

I believe that the white coat was necessary to completing this project. It served as a key to the hospital and to the patients' rooms. On the other hand, it marked me as an "expert," at least at the start of each interview. So, I had to overcome this power imbalance by reminding participants that I was a student, and working hard to create rapport with participants. Building rapport may have been somewhat easier in this situation because there was a lot to talk about – a new baby, a new name, a new family member. I asked about each participant's family and about the hospital food and when they were going home from the hospital. I may have relied on the white coat to enter, but, it forced me to be a better interviewer once I was inside.

Throughout the data collection process, I constantly compared and analyzed transcripts, observer comments, and memos. As an emerging feminist scholar, I believe that women's lives, experiences, and points-of-view are important. During data collection and analysis, I avoided the trap of "essentialism" through humility and a willingness to understand the perspective of my participants. I was humbled by the stories and personal experiences that my participants shared with me. I was grateful for these women's thoughtfulness and insight. I used observer comments and memos to avoid a positive bias toward my participants and to move beyond common sense in my interpretation of my own culture. As Martin (2001) found, at times "I anguished over the obviousness of everything the women were saying" (p. 11). At other times, I was surprised by my participants. I questioned the assumptions that I brought to the research and to my analysis of the participants' stories and voices. Specifically, I distanced myself from my participants by using pseudonyms during data analysis. I utilized deviant-case analysis and alternative explanations to avoid positively biasing results from the participants. I employed a number of strategies to improve validity. Silverman and Marvasti (2008) describe five ways to improve valid findings in qualitative research. They recommend employing (1) the refutability principle, (2) the constant comparative method, (3) comprehensive data treatment, (4) deviant-case analysis, and (5) using appropriate triangulations. This study employed these and other methods, such as self-reflexivity through journaling and memoing to improve the empirical rigor of this inquiry.

Chapter 4: Results

The purpose of this chapter is to present the research findings, which emerged from 44 in-depth qualitative interviews with mothers of newborns. Quotes are a true representation of the participants' speech, with punctuation added to ease readability. Very few changes were made to ensure adequate communication of the participant's true meaning. Participants are identified with a pseudonym linked to their biographical profile (see Appendix E). The results address the intersection of social marketing, diffusion of innovations theory, and women's health. Evidence for each of the five research questions is addressed in detail below.

RQ1: How Do Biological Mothers of Newborns Make Meaning of Health?

Participants' understandings of the mother-child dyad impacted their meaning making of health. These biological mothers of newborns questioned and reformulated traditional expectations of "putting the baby first." These women recognized that in order to care for their newborn, they first need to care for themselves. Participants made meaning of health by reformulating the mother-child dyad in relation to a number of physical and mental/emotional health issues. Specifically, participants made meaning of health in two ways: (1) by reformulating the mother-child dyad and letting go of "superwoman," and (2) by reviving the self through physical and psychological health, including (a) reproductive health, (b) chronic conditions, (c) preventive care, and (d) mental/emotional health. Evidence of these themes is described below.

Reformulating the mother-child dyad: Letting go of superwoman.

Participants acknowledged the intrinsic duality of the mother-child dyad. According to one participant, "it is all connected. If I am healthy, I will have a healthy baby" (Morgan).

Another participant said, "now, that I have a baby, the baby is a top priority. But, I also need to make myself a higher priority" (Amelia). Participants discussed the importance of self-care in order to appropriately care for the health of the baby, "now, I have to take care of myself, so that I can take care of the baby. We both have to be healthy" (Zoey). One participant described her thought process, and the struggle to put her own health first, "I'm just thinking about taking care of her [newborn], I guess. I was thinking, her health is more important than mine. But, without mine, she can't be healthy. So, I guess she is my only way to stay healthy" (Adriana).

The role of mother influenced participants' imperative to stay healthy. According to one participant, "I'm more concerned about my kids. I don't do anything to put my health in jeopardy because it's all about my kids" (Aubrey). Another participant reaffirmed the importance of health to fulfill the role of mother, "now that I am a mom, I want to be hypervigilant about my health. I want to make sure I get enough sleep. I want to be healthy for the baby. I want to be there for the baby" (Isabella). Participants also discussed the importance of improving their health or staying healthy in order to watch their children grow into adults.

Participants recognized and challenged the traditional expectation of "putting others first." According to one participant, "I try to take it easy instead of trying to be Superwoman" (Ava). Participants struggled to overcome the expectation to be "Superwoman." One participant described this challenge, "for new moms, I think the newborn's health is often seen as more important than their own, which isn't good… I totally get it, new moms feel overwhelmed and tired – your own health things take a back seat" (Allison). Participants described the importance of "me" time in order to avoid

becoming overwhelmed and tired. For these biological mothers of newborns, "me" time meant "taking care of myself," "just getting away from my, well, kids sometimes," and "making sure I have time for my friends." Participants also described the importance of not becoming overwhelmed by the new baby by protecting time to eat right, get enough sleep, and visit the doctor for preventive care.

Reviving the self: Physical and psychological health. Participants described a variety of physical and mental/emotional health issues, which influenced how they made meaning of health. In 44 interviews, I coded 159 different health issues or topics discussed by participants. Each participant was also asked to identify her highest priority health issue. For most participants (25 of 44), this was diet/nutrition and exercise. As a result, I focused on diet/nutrition and exercise in the next section. Here, I described the other health issues discussed by participants, including (a) reproductive health, (b) chronic conditions, (c) preventive care, and (d) mental/emotional health.

Reproductive health. As mothers of newborns, reproductive health and fertility emerged as health issues at the forefront of many participants' minds. They described their struggles with infertility, including miscarriage and polycystic ovarian disease. According to one participant, "I was very concerned about my reproductive health. I had a couple ovarian surgeries. I was very concerned I wouldn't be able to have children" (Natalia). Participants described challenges they faced during pregnancy, such as gestational diabetes and preeclampsia. These women also described the importance of post-partum healing and adjusting to the new baby.

Many participants described the experience of labor and delivery. The recent birth experience served as a major health event in their lives. Although each experience was

unique, listening to and understanding participants' birth stories created a unique rapport between researcher and participant. According to one participant:

I had a 40 hour labor. I ended up having a C-section. She was born on Sunday at 2am. But, she makes it all worth it. We came in around midnight on Friday. My labor was progressing very slowly. I wanted a natural childbirth. I had a birth plan and my doctor had "okay"ed it. By 7am, I was still not dilating. They said they wanted to give me Pitosin, which I was very upset about. So, the doctor said we could wait. So, we waited.

By 6am on Saturday, I had an infection and a 101 degree temperature. I felt defeated. They said I was so tired and sick that I really needed an epidural. So, I got an epidural and I ended up with Pitosin, after all. I pushed for an hour and a half. The epidural was wearing off.

My doctor was really amazing. She just kept saying, "I want you guys to do what you feel." She gave us the option to push for another hour. So, I pushed for another hour. Then, I just felt so defeated. So, I ended up with a c-section.

She was 8 lbs 12 ounces. She was healthy. My infection didn't affect her. I was exhausted and had a temperature of 103. It was a very amazing experience. I feel like I had everything happen to me. I got to have a natural labor. I got to have an epidural. When the epidural wore off, I got to push naturally. And then I had a C-section. It was very emotional. But the care here has been wonderful. (Lilly)

Participants' birth stories offered an in-depth understanding of their values, their relationship with their doctor, and their beliefs regarding the medical model.

Looking to the future, these women described the role of contraception and birth spacing in their lives. Participants used a variety of contraceptive methods prior to pregnancy, including the birth control pill, injection, intrauterine device (IUD), and withdrawal. According to one participant:

> Twelve months ago, I probably had birth control methods in mind that I possibly could have taken. At the time, I was trying to get pregnant. I really wasn't too knowledged on birth control methods. I was taking a birth control pill. I purposely stopped taking it, to get pregnant. (Sophia)

On January 26, 2012, I wrote a memo describing my experiences sitting in on a number of standardized midwife visits. Although these visits were not recorded or transcribed, participants often invited me to stay and listen during the midwife consultation. The midwife was an employee of Women & Infants Hospital and employed a standard checklist of questions to prepare mothers of newborns to go home. The midwife asked a number of questions, including, "what is your plan for contraception?" One mother responded, "my husband and I usually just wing it." The midwife replied, "well, you have options: condoms would be an option or withdrawal." The mother responded, "Yes, we use withdrawal." The midwife said, "well, withdrawal is about 80 percent effective." The midwife offered to administer a birth control injection before the new mother left the hospital. The new mother declined. A number of participants described the offer of a birth control injection prior to discharge. Many participants refused the birth control injection. According to one participant, "they asked me if I wanted to get a shot before I leave. I don't want to get pregnant right away but I have to wait 6 weeks to get Mirena [IUD]. So, I have to avoid sex" (Aubrey). A number of participants described their

intention to undergo female sterilization. According to one participant, "I have three children under two. I plan to get my tubes tied. I'm tired of being pregnant. I just want to be me again. I want to have the strength to take care of my children" (Nevaeh).

Chronic conditions. Participants faced a variety of chronic conditions, which contributed to their understandings and opinions about health. These chronic conditions included orthopedic issues, anemia, dermatological concerns, migraines, scoliosis, irritable bowel syndrome (IBS), lupus, seizures, and multiple sclerosis. In some cases, these health concerns impacted the participant's view of her own health and how well she could care for her newborn. According to one participant, "imagine being a mother and being worried about having a seizure with him or him having a seizure eventually. But I don't really worry about it. I try not to. Well I don't have them very often" (Amaya). Another participant said, "unfortunately, my highest priority health issue is multiple sclerosis. If I don't take care of myself, everything else goes by the wayside. I have to be healthy for me and the kids" (Kaylee).

Preventive care. Participants described the importance of preventive care, including regular doctor and dental visits, quitting smoking, learning about family history of disease in order to take measures to screen, prevent, and treat these diseases (e.g., Alzheimer's, Parkinson's, breast cancer, cervical cancer, diabetes, colon cancer, high blood pressure, kidney disease, asthma, leukemia, etc.), and preventing infectious disease (e.g., cold, flu, pertussis, etc.), such as through vaccinations and regular hand washing. Preventive care emerged as an important aspect of caring for self in order to care for children. According to one participant, "When I think about health, I think I need to stop smoking. I would love to see my kids grow. If I keep smoking, I know there is a risk of

not seeing them grow up" (Nevaeh). According to another participant, "when I was younger, my father died of colon cancer. So, when I was younger, I made the conscious decision to prevent getting it. I have been getting colonoscopies" (Isabella).

Mental/emotional health. Participants struggled with anxiety, obsessive compulsive disorder (OCD), and depression. Stigma and misunderstanding surrounding post-partum depression and the "baby blues" played an important role in participants' understandings of what it meant to be the mother of a newborn. One participant said:

> Especially in terms of "baby blues" or depression, I think it is important that people be able to distinguish the difference. Significant others should know what it's all about, I think sometimes it's minimized, especially people are so vulnerable after they have a baby. (Savannah)

Another participant discussed the importance of recognizing maternal health issues, especially post-partum depression, in order to provide appropriate care for a newborn:

> Getting your baby the care they need. If you have trouble, if you're struggling with depression, get help for yourself. Especially in light of that Coventry mother that smothered her baby … You can sense the isolation and frustration. We've all been there, where we are so mad. Teaching moms to walk away. It's okay to leave your baby in the crib while you walk away for a minute, step outside, take deep breaths. Walk away and calm down, it's so important. Only takes a minute. (Khloe)

RQ1.1: How Do Women Define their Highest Priority Health Issue, Both for Themselves and for their Newborn?

Most participants identified diet or nutrition and exercise as an important health issue and this topic emerged as the highest priority health issue for many participants. These women discussed a variety of health issues for their newborn, including caretaking, risk, and the integration of their own health and the baby's health. Although topics related to newborn health were more varied, feeding emerged as the highest priority issue for many participants. Specifically, participants defined their highest priority health issue for themselves as (1) the constant conversation of diet and the body, including (a) losing weight and body image and (b) interpretation of medical authority and listening to the body. Participants defined their highest priority health issue for their newborn as (2) the challenges of bringing up baby by ensuring safety, sustenance, and wellbeing, including (a) caretaking, (b) risk, and (c) integration of maternal and child health, particularly feeding. Evidence of these themes is described below.

The constant conversation: diet and the body. Participants mentioned diet and nutrition or exercise 101 times throughout the interviews. Twenty-five of 44 participants identified diet and nutrition or exercise as their highest priority health issue for themselves. Many participants associated health with food and diet. Participants described varied cultural understandings and practices related to food. Participants described "eating right" as the "most important thing" and described themselves as "focused on," or "obsessed with" diet and exercise. One participant said, "I am really worried about my diet right now" (Sarah). Participants discussed issues of diet and exercise as their primary health concern. Losing weight was closely tied to

understandings of the body, body image, and being a woman or mother. Participants also described the challenge of waiting to exercise following delivery until an arbitrary deadline imposed on her body by doctors.

For some women, health was synonymous with diet and nutrition. According to one participant, "when I think of health, I think of food" (Maya). Another participant reinforced the link between healthy eating and the body, "when I think about health, I think about the body- being healthy, living a healthy lifestyle…Eating right is my biggest thing" (Alexa). Many women described a history of being "concerned about" diet and nutrition. According to one participant, "I've always been concerned about my weight…As long as I can get out and hike or kayak and do what I want. Those are my driving factors for health" (Gia).

Other participants were guided by traditional, cultural understandings of food and diet. According to one participant, "I stay healthy by eating good food. I eat Mediterranean food, so I don't have to think about my diet" (Morgan). Another participant said:

> For me, I think the most important health topic is food. I eat a lot of vegetables, meat, and fish. When I go home, I forget about what I eat. It just becomes natural, normal. Asians follow what the body needs- we eat a lot of rice. But, I've gotten used to the food here. I try a lot of the different food here. And I don't have allergies really, but there are differences between food here and at home. (Stella)

Losing weight and body image. Participants described the importance of losing weight in relation to body image and being a woman or mother. Many participants acknowledged the problematic societal emphasis on losing weight among women and

particularly the mothers of newborns. One participant described the prevalence of discussions among women about diet, where the focus is on "just losing weight now. I definitely want to get back to where I was…I don't want to stay this way…It's like a constant conversation with women, I swear. How do we lose weight?" (Addison) Another participant reinforced the ubiquity of weight in the lives of women, while acknowledging that too much emphasis may be problematic, "I guess for me, women always think of their weight when they think of being healthy. I definitely paid attention to my weight, not too much attention, but I think that's a good gauge of how you're doing health-wise" (Madeline).

Many participants described the problematic emphasis on losing weight among women and new mothers. One participant said "I plan to start my diet as soon as I get out of here" (Jasmine). According to another participant, "right now, I am mostly thinking about exercise, losing weight is always kind of, all women are never really satisfied. I think many mothers are focused on losing weight, unfortunately. I'm like, 'dude, you just had a baby, relax'"(Savannah). Participants suggested that this focus on weight loss and body image may be detrimental to overall women's health. According to one participant, "the important thing is to do it right. Some people just get silly and ignore themselves health-wise to get back down. Vanity. That's the only general thing about it. People worrying what they look like. Thinking about their man" (Amaya).

Other participants described the importance of losing weight in order to fulfill their role as a mother. According to one participant, "weight loss – I think about that stuff all the time. I'm a mom. When I think of my health, I just think about not being overweight. At a comfortable weight I should say" (Ava). Another participant described

the importance of losing weight to be able to play with her children, "as soon as I am all healed up, I want to be healthier, so we can all play together" (Emma).

Participants also associated weight loss with medical advice in order to avoid pregnancy-related complications. According to one participant:

> In terms of my health, I have hypertension. My mom has diabetes. I knew that I needed to lose weight. But then, the baby came along. While I was pregnant, I found out that I had gestational diabetes. I am planning to get pregnant again, so, I need to lose enough weight, so that I don't get gestational diabetes next time. (Caroline)

Medical authority and listening to the body. The role of medical authority in women's diet and exercise emerged in participants' understandings of how much they could exercise and what they could eat during pregnancy, and when they could exercise after delivery. Participants described conflicting understandings and approaches to exercise during pregnancy. One participant suggested that exercising could be harmful to a developing fetus, "twelve months ago, I was trying to get pregnant. So, I was exercising less because I didn't want to jostle the baby" (Morgan).

Participants described a variety of approaches to fitness and exercise during pregnancy. One participant aptly summarized the challenge that pregnant women face in regard to understanding and choosing healthy exercise options:

> I would like to know more about exercising, and what, certain exercises you can do while you are pregnant, during and after pregnancy. And eating on a daily basis- what maybe some foods you should stay away from, like if you are eating

fish, only eat a certain amount, or only eat this kind of fish. Just how to keep a

good, balanced diet. (Sophia)

Some participants described the importance of staying active throughout pregnancy.

According to one participant, "I like walking a lot. I actually went hiking all throughout

my pregnancy up until six or seven months. I look forward to exercising again. I haven't

talked to my doctor about it yet" (Faith). Other participants described their inability to

continue with an exercise program, as a result of pregnancy. One participant said, "I miss

my women's cardio kickboxing class. It was high intensity, so I couldn't do it during

pregnancy. I can't wait to get back to that" (Molly).

Participants described the role that physicians play in dictating the acceptability of

exercise during and after pregnancy. One participant described how a medical restriction

during pregnancy drastically changed her physical activity regimen:

Nutrition and exercise are really important to me. I exercise as much as possible. I

used to go to the YMCA. I would do Pilates and yoga. Before I got pregnant, I

was training to run a 10K, that was my top of mind exercise goal. I had a running

schedule and I was mixing in other exercises to build up endurance. Then, when I

got pregnant, I had placenta previa and they [my doctor] restricted my exercise. I

was only allowed to walk, walk around the block, I couldn't do the treadmill,

couldn't do Pilates. It was hard, that was my kind of outlet, that was "me" time.

I'm not a big hobby person. I tried reading. I started scrapbooking for my

daughter. Just trying to fill the void that exercise filled. (Ariana)

Some participants challenged the arbitrary six or eight week resting period post-delivery.

According to one participant, "running, which I miss so much, I hope to get back into it

soon…They said six weeks. But, I am just going to try to listen to my body. I'm just going to see how my body feels" (Kaylee). Another participant felt ready to run after only a couple of weeks, however, she reinforced the importance of the doctor's "okay" to resume her preferred exercise, "now I cannot wait. It is 8 weeks for the C-section. I really feel like running now. When I have my 6 week with the doctor, I'm going to ask him if I can start a little early" (Isabella).

Other participants focused on diet and nutrition while they waited to resume exercising. According to one participant, "well, I need to reinvigorate my nutrition and exercise after the pregnancy. I had a C-section, so I have to wait to exercise. But, I am focusing on a balanced diet" (Allison). Some participants accepted the importance of waiting to begin exercising. One participant said, "next month, I will be able to exercise again. It is okay because I know my body needs to wait. I didn't think nothing of it, I just knew my body needed to wait" (Aaliyah).

Bringing up baby: Ensuring safety, sustenance, and well-being. Participants discussed a variety of health issues for their newborn, including topics associated with caretaking, risk, and the integration of maternal and child health. Interviews did not produce a clear highest priority health issue for the majority of participants. Many participants, 11 of 44, identified feeding as their highest priority health issue for their newborn. Each of these health topics is discussed below.

Caretaking. Participants discussed a variety of health topics related to taking care of a newborn. Concerns included sleeping, dermatological issues, hygiene, cord blood banking, and prematurity. A number of participants expressed concerns about how to position a newborn to sleep. According to one participant, "putting the baby to sleep, I

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get nervous that I don't know the right ways to do it. I mean, I know to put her on her back. But I worry that I'm not doing it right" (Olivia). This concern exemplifies the challenge of translating knowledge into practice. Although Olivia possesses the knowledge to put her newborn to sleep, she feels unprepared and worries that she's "not doing it right."

Participants described the challenges of maintaining newborn hygiene, including bathing, diapering, and caring for circumcisions, umbilical cords, rashes, and fingernails. One participant said "on bathing my baby, I did a lot of research on that when I got home because I was nervous with the umbilical cord and everything" (Natalia). Another participant summarized the concerns that mothers of newborns described regarding hygiene: "the baby, he is new, so I have a ton of questions. I feel like I have so many new questions in the last 24 hours. Things I never thought about before, like, how to clean after the circumcision" (Molly).

Participants described the importance of cord blood banking as an important way to "take care of" and "protect" their newborn in the future. According to one participant:

> We couldn't afford it for ourselves. So, we donated her cord blood. At least somebody gets to use it. To be able to do that, we were very proud. Definitely. Our heart was in the right place. We just felt like it was the right thing to do. (Emma)

Prematurity was also a concern for some participants. One participant described her experience taking progesterone shots (e.g., 17P or 17 alpha-hydroxyprogesterone caproate) to prevent preterm birth. Participants also discussed their concerns related to developmental delays and failure to thrive associated with premature birth.

Risk. Risk factors emerged as the highest priority health issue for a number of participants. Participants discussed SIDS, genetics, infectious diseases, and chemicals in baby products and baby food as potential risk factors for their young infants. According to one participant, "SIDS is a health issue that scares the hell out of me, I'm very worried about breathing" (Rachel).

Participants also discussed their fears related to genetics. According to one participant, "for the baby, I worry about genetics. Like, genetically, what might the baby get genetically?" (Mackenzie) Participants described a variety of genetic concerns, including minor birth defects, Beta-thalassemia minor, von Willebrand disease, allergies and asthma. One participant noted, "my other kids do have asthma, I worry about that, the baby getting that" (Nevaeh). Another participant, who has been unable to determine the cause of her own seizures worried about the likelihood of her son experiencing a similar affliction, "is he going to have them eventually?" (Amaya)

Many participants discussed concerns related to infectious diseases, including cold, flu, pertussis, and vaccinations. These women described the importance of hand-washing and how to avoid colds and flu. One participant suggested that her highest priority health issue for the newborn was:

Keeping a cold away. I don't want her to get sick in her first month of life. Especially since it's January and everyone is sniffling…I ask people to wash their hands. I wasn't prepared to deal with people not listening. They just pick the baby up anyway. If you say don't kiss her face, they kiss her anyway. I've been having my husband wash her face after but I don't want to dry out her skin. (Alyssa)

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Pertussis, or whooping cough, was a common concern among participants, which may be related to the recent outbreak of pertussis in Barrington, Rhode Island from December 22, 2011 through February 27, 2012. Twenty-nine pertussis cases were identified over that time period. Many participants received the Tdap (combined tetanus, diphtheria and pertussis) vaccination while they were in the hospital. Although some participants disagreed about state mandated vaccinations and questioned potential side effects, all participants agreed that vaccinations were valuable. One participant succinctly summarized this perspective, "there is a controversy surrounding vaccinations. I think they are important. To me, the benefits outweigh the risks. That's important to me" (Isabella).

Participants described the importance of protecting newborns and young children from chemicals in foods and baby products. Many women described a concern with chemicals in everyday plastic products. In order to avoid chemicals and preservatives in food, some participants cooked homemade baby food. One participant described her reasons for making her own baby food:

I went to the store, grabbed a jar of baby food and brought it home. And it stunk! I thought - I wouldn't even give this to my cat, why would I give it to my baby? And the price. Looking at this jar of baby food, which cost 84 cents and I go buy a whole bag of carrots for a dollar and have a week's worth of food instead of one feeding. I went to the store and bought a whole bunch of vegetables and got my blender and also started steaming. It took half an hour at 9:00 p.m. on a Sunday and I would have enough food for the week at a fraction of the cost of those jars. Now I knew what was in the jar and it smelled better. (Khloe)

Another participant described how easy (and how quick) it was to make baby food. She said, "my friend did it all and she taught me. You just steam vegetables and purée it. A lot of the canned food contains preservatives – which can impact the baby's early development" (Alexa).

Integration of maternal and child health. Many participants described health topics integrating maternal and child health. Participants discussed the importance of the relationship between mother and child, including bonding with the newborn and sustaining relationships with older children. According to one participant, "I also just want to make sure I develop an attachment with the baby. I want to be there with him emotionally. I want to try to learn as much as I need to know about his health" (Isabella).

Many participants described the beneficial practice of the "first hug" or "skin-to-skin" bonding experience with the newborn. According to one participant, who could not breastfeed due to contraindication with seizure medications, "for me, it's very interesting that I can still do the same thing and get that bonding. That's something I liked and I started doing it as soon as the nurse said I could" (Amaya). Participants also discussed the importance of maintaining a bond with older children, including how to discuss sensitive topics, such as sexual health. One participant said, "I would like to find out how to know my kids more. I mean everything is related to health. So, how to know your kids and what they are up to and how they are growing. That is important"(Jasmine).

Feeding newborns emerged at the integration of maternal and child health. Mothers of newborns believed that their own diet and nutrition impacted the health of their infants either directly through the quality of breastmilk or indirectly as an example of healthy eating habits. Participants suggested that healthy eating habits start with

feeding. Participants described the importance of "ending the cycle" of obesity and "being a good role model." According to one participant:

> I also want to get the baby into healthy habits right away. That starts with feeding. The whole family, we're chubs. We don't want her to be a chub. We want to start off with healthy eating habits. We want to end the cycle, you know? (Caroline)

Another participant discussed eating well-balanced, natural foods as opposed to packaged foods in order to serve as a role model. She said, "I think since my daughter was born, I pay more attention to it because we try to model healthier eating. It's harder to teach her to eat fruits and vegetables if we're not" (Madeline). Participants emphasized the importance of modeling healthy behavior. According to one participant, "I would like to, well, we have been really focused, at least in terms of the family, focused on being healthy. If I eat well, everyone in the house eats well" (Kaylee).

Participants described five approaches to feeding infants, including breastfeeding, breastfeeding and pumping, pumping only, supplementing breastmilk with formula, and formula only. In each of these categories, participants described concerns about adequate nutrition and ensuring that newborns gain weight.

Participants described the short-term and long-term benefits of breastfeeding for the newborn and for the mother's health. These women noted that short-term benefits included the prevention of infection, boosting the immune system, and easy clean-up. Long-term benefits included happier, healthier children, and the prevention of obesity and other diseases. According to one participant, "breastfeeding wasn't really a decision. It was just something I knew I was going to do. It's the natural thing for me to do" (Ava).

Other participants chose breastfeeding after learning about the maternal and child health benefits. According to one participant, "I found out that breastfeeding is more beneficial for both of us. Breastfeeding is really good – for the mother's own body, too" (Stella).

Participants emphasized the importance of maintaining a nutritious diet to pass on the benefits to the newborn. Participants said, "since I am breastfeeding a child, I need to make sure I am eating healthy, so that I know my child will be healthy" (Sophia) and "I eat right because I want to make the best breastmilk that I can" (Isla). Another participant agreed, "I am breastfeeding. So, it is important for me to eat healthy foods, it is important to give a good example" (Savannah).

Age played an important role in a number of participants' decisions to breastfeed. According to one participant, "I was a lot younger when I had my other children, so I didn't want to hear it, you know, about breastfeeding. I think young mothers think breastfeeding is gross, they don't want to go there" (Sarah). Another participant agreed, "I had my other children when I was younger. I didn't know too much about breastfeeding. This pregnancy, I saw a lot of promotion, a lot of support for breastfeeding. It's easy actually. No bottles to clean after" (Faith). Some participants chose to breastfeed after formula-feeding previous children. These women noted the importance of promotional materials and campaigns endorsing the benefits of breastfeeding for both mother and child.

Some participants described their struggle to breastfeed and the importance of the breast pump as an alternative supply of breastmilk. According to one participant, "I am breastfeeding, I am trying as much as I can. I am also using a breast pump. So I can give her breastmilk in a bottle" (Emma). Participants discussed the time-consuming work and

frustration of breastfeeding and pumping. One participant said, "our baby did not latch well. So, [the lactation consultant] has been working with us to help express breast milk and supplement with pumping. She's made it a little easier to stick with it. Pumping and feeding is twice as much work" (Allison). Other participants were unable to breastfeed and chose to rely solely on pumping to provide breastmilk. According to one participant, "I would rather breastfeed, but as long as the baby gets the breastmilk, that's all I care about" (Isabella).

A common concern among all participants was ensuring that their newborns received adequate nutrition. Some participants supplemented breastmilk with formula. One participant described how her milk hadn't come in yet while she was in the hospital and she struggled to feed her newborn. She said, "I would get tense and stressed. I started to sweat. The night nurse said, 'you have to relax, you can supplement with formula.' She helped me to relax. With the formula, I know he's getting the nutrition he needs" (Isla). Another participant agreed, "I am breastfeeding. Breast milk is best. But I am doing half and half, supplementing with formula. He loves it. It is good to know you have options. I know breastmilk prevents sickness" (Aubrey).

Other participants chose to feed solely with formula. According to one participant, "all my kids been bottle-fed. [How did you make that decision?] It's normal. [Why?] It just is. Everybody I know bottle-fed their kids" (Maya). Another participant described the communal benefits, "I'm formula feeding. The main reasons are, I like that my husband can contribute and bond with the baby. Being tired … its nice to have help" (Alyssa). Another participant described her decision to bottle-feed:

I chose to bottle-feed this time instead of nurse. That was definitely a decision I

struggled with, not because of the lack of information at all, just because what I

felt was best for me is a little different than what society feels, like 'breast is best.'

I know the benefits of breastfeeding are really fact-based but I tried nursing with

my first daughter, and it was really a struggle so when I was making this decision,

I had to think of me personally and all of our family factors and personal factors,

so it wasn't just about the quality of breast milk versus formula but it was the

whole lifestyle aspect that was a difficult decision for me…It makes you feel a

little bit guilty even though you know you're making the best choice for yourself.

(Madeline)

Feeding emerged as a controversial issue, illuminating a variety of cultural taboos, which

ranged from societal pressure to breastfeed, viewing breastfeeding as "normal," or

understanding formula feeding as the norm. Participants based their newborn feeding

decisions on knowledge about the benefits of breastfeeding, ability to breastfeed, social

system expectations about feeding, and personal preference.

RQ1.2: What Motivates Women to Adopt Healthy Behaviors and What Barriers

Keep Women from Adopting Healthy Behaviors Related to Their Highest Priority

Health Issue?

Participants described a variety of factors that motivated them to adopt healthy

behaviors or served as barriers to keep them from adopting healthy behaviors related to

their highest priority health issue. Specifically, (1) partnerships motivated women to

grow and adopt healthy behaviors related to their highest priority health issue and (2)

limited resources, including unbalanced work and life, served as barriers to adopting

healthy behaviors related to their highest priority health issue. Evidence of these themes is presented below.

Partnerships: Motivating women to grow. Participants described partners in health as a central motivating factor to adopt healthy behaviors related to their highest priority health issue. Pregnancy offered an opportunity for these women to move outside of their comfort zone by partnering with online communities. Participants were motivated to adopt healthy behaviors by participating in community partnerships, such as ShapeUpRI, Women & Infants Hospital Warm Line, and government programs, such as visiting nurses and Women, Infants and Children (WIC) nutrition program. Some participants benefited from access to health insurance and classes at Women & Infants Hospital.

Participants who had never joined online communities or used new media platforms in the past were more likely to do so during pregnancy. In this way, pregnancy offered an opportunity for participants to move outside of their comfort zone. Participants described pregnancy as time when they tried new media platforms. According to one participant, "the first app I ever used was an ovulation app. Which it worked, we were pregnant the following month... In the hospital, we also had contraction apps. The doctor was like - can you stop with the phone?" (Kaylee) Many participants joined online communities for the first time during pregnancy. According to one participant, "I don't usually participate, but while I was pregnant, I did join TTC (Trying to Conceive) Clubs. It was helpful to read explaining stories" (Lilly). Another participant agreed, "I had never used anything like that before, but while I was pregnant I signed up for this pregnancy website birth club type thing…for a little bit of camaraderie. To see if what I was going

through was normal" (Natalia). Participants described joining these communities during pregnancy as a new way of interacting online. Many participants were already a part of new mom groups or parenting communities online. This suggests that pregnancy serves as a gateway or entry point to online communities, rather than a one-time episode.

Participants described the importance of the resources they accessed through Women & Infants Hospital. According to one participant, "I believe this hospital, the whole family's health is important. The social worker came to see me. The hospital is concerned with my health and my family's health. The nurses are very good here" (Rachel). Participants appreciated the family-centered approach to care provided by the Hospital.

Many participants discussed the importance of the Warm Line as a partnership, which allowed them to adopt healthy behaviors. The Warm Line is a service of Women & Infants Hospital offered by the Health Education Department and supported by the Auxiliary. The Warm Line is a telephone hotline for new parents who need advice on mother's postpartum or newborn care. Registered nurses respond to all calls, Monday through Friday, 9:00 am to 9:00 pm, or Saturday and Sunday, 9:00 am to 5:00 pm. According to one participant, "the Warm Line was very helpful when I called. I used the Warm Line probably more than a dozen times" (Melanie). Another participant told how a nurse from the Warm Line called her cell phone on her second day at home. She said, "I didn't know they were going to call. They were amazing. I had this whole list of questions that I was going to ask the pediatrician. They answered them all" (Savannah).

Participants described the role of their WIC counselors and visiting nurses in motivating them to adopt healthy behaviors related to their highest priority health issues.

According to one participant, "I had a visiting nurse. I had a whole list of things, a whole list of questions. She answered all of them: How often to feed? How many ounces each time? How many dirty diapers every day?" (Isla) Another participant agreed:

> I had a visiting nurse come to the house. I had a lot of nervousness about being able to feed the milk on a schedule, with using the pump. I had a laundry list of problems. I got a lot of help and referrals from the hospital. I have no idea how I got the visiting nurse. Someone called me after I came home and told me about it, so I don't know how I was able to receive it or who had referred me. I didn't ask. I was just very appreciative to have it." (Natalia)

Although many participants benefitted from the Warm Line, as well as government resources, such as the visiting nurse and WIC counselor, access to these resources was not universal. As Natalia suggests, even participants who accessed these resources were sometimes unsure how or why they were eligible for such services.

Disparities in access to resources also emerged in terms of classes and insurance coverage. To participants who could access these resources, classes and insurance coverage served as motivators to adopt healthy behaviors related to their highest priority health issue. According to one participant, "I did take another birthing class before this baby. My last birth was over 15 years ago. I took the hospital tour also. They were excellent. They explained everything" (Faith). Another participant agreed: "I took a class at Women & Infants on caring for your infant in the first 6 weeks and that was very reassuring. Any email information they shared was useful" (Natalia). Participants discussed the importance of health insurance to adopt healthy behaviors and to treat chronic diseases, such as diabetes. According to one participant, "when I think about

health insurance, I thank God I have it. I found out that I had gestational diabetes with this pregnancy. My insulin cost $167.99 without health insurance. I know that the less fortunate don't have it" (Aubrey).

These women supported community and governmental partnerships in health. According to one participant, "here in Rhode Island, we have Shape Up RI, which encourages you to move more. I think Shape Up RI is a fantastic program. I think what Rajiv Kumar has done is amazing. He has so many participants" (Khloe). Another participant said:

> If you want to change a habit, you need to start with the new generation. Here, the government does not regulate food in schools because "it's a free country." Sometimes the government needs to think about starting with the kids. If we can change their mentality…We need to make sure our kids are more educated. So they can think before eating this stuff. (Morgan)

Limited resources: Unbalanced work and life. Participants described limited resources as a central barrier to adopting healthy behaviors related to their highest priority health issue. Participants described the challenges of balancing work and life, which made it difficult to adopt healthy behaviors, especially related to diet and exercise. Participants discussed the obstacles they faced from health insurance companies and lack of access to classes at Women & Infants Hospital. These women faced limited resources of time, money, childcare, and insurance coverage.

Participants described the challenge of incorporating a healthy lifestyle, including diet and exercise, while working full time and raising their children. According to one participant, "it's hard with the kids and working…I don't think I've changed too much.

Unfortunately, it is just too hard to incorporate that in, any kind of changes, I'm so busy working" (Alexa). Another participant agreed:

> I try to exercise, but with one kid at home, it's hard. It's hard to be an active participant in doing extremely healthy things because I am on the go all the time. Working full time, taking care of the family and now this little one…We try to eat well, we do. But it's difficult when you have kids running around and you really need to get dinner on the table and you don't have a lot of time. (Khloe)

Although participants described diet and exercise as an important focus in their life, many participants could not prioritize healthy habits. One participant said, "early in my pregnancy, like the first half, I was good at eating well and I walked a lot. But work got a lot more stressful…It's hard to follow through, there is only a limited amount of time" (Savannah). Other participants described strategies to incorporate exercise into their busy lives. One participant described her intent to join a Mommy and Me yoga class after obtaining her doctor's approval at her six-week check-up. Another said, "I am going to go to the gym a couple of days a week, when my husband gets home from work. I'm excited" (Ariana).

Many participants described limited maternity leave as a barrier to breastfeeding or continued breastfeeding. One participant said "I will be breastfeeding for at least 3 months, before I have to go back to work, you know" (Jasmine). Another participant said, "I am pumping so that I can stockpile milk when I go to work. [When do you go back to work?] I'm only home for 8 weeks" (Natalia). Faced with going back to work or school, participants made divergent decisions regarding how to manage feeding. One participant said, "I'm formula feeding. Mainly for the time. I don't have time for breastfeeding. I

have to go back to school and work. There is just not enough time…I am concerned about time management" (Olivia). Another participant said, "I am looking to go back to work full-time. So I'm worried about the breastfeeding, the pumping and going back to work and how to manage all that" (Gia).

Limitations on insurance coverage emerged as a barrier for some women. According to one participant:

We found out we had to have three [miscarriages] before they would really do any testing. I had two [miscarriages] and it was like, it would be really hard to try for a third. I mean three strikes and you're out. That was very frustrating. You have to be really determined, you have to want that family and fight for it. The system says that we're not going to help you unless you really want to fight for it. We got lucky the third time. (Gia)

Participants described lack of insurance coverage and cost as the primary reason they did not enroll in parenting and childbirth classes at Women & Infants Hospital, even when they believed they were in need of these resources. According to one participant, "we didn't do any classes at the hospital because Insurance didn't cover it. I wanted to take the birthing course, the hospital tour, oh, and the CPR class. If they were free, I would have done them" (Olivia). Another participant agreed:

I would have loved to have had more resources. I didn't take advantage of all of the classes at Women & Infants because they are very expensive, incredibly expensive. We only did one class because it was cost prohibitive. We took the "Caring for You and Your Infant" class. But there was a lot they didn't cover. They didn't talk about feeding. It was almost too broad. It was very expensive for

what you got. $75 was very expensive and there were 25 people in the class. They charge $125 for the labor and delivery class, so we didn't take it. It's appalling that the hospital charges you to take the tour [of the maternity ward]. (Ariana)

Participants also discussed changes in cost-sharing between the hospital and the patient. According to one participant:

My older son is 6 and when I had him, there were free classes. While you were in the hospital, there was a bathing class, a breastfeeding class, and I don't even know what else. If I was a first time mom, I would have really been looking for that information, for that help. I'm surprised they don't offer that anymore. (Kaylee)

Other hospital resources, such as the Stork Club Dinner, were cost prohibitive for many participants. Stork Club Dinners are a special gourmet dining experience offered to all maternity patients for a fee. This candlelight dinner, served in the privacy of the patient's hospital room, offers selections from fine appetizers to desserts, complete with wine in complimentary signature glasses. Patients may order their Stork Club meal for lunch or dinner. If patients are spending their birthday at Women & Infants, a birthday cake celebration is available. According to one participant, "we had a Stork Dinner. My auntie works in the kitchen here, so, she arranged it for us. We couldn't afford it. It is wicked expensive. But, it was amazing" (Rachel).

Health classes, the Stork Club Dinner, and other resources designed to encourage healthy behaviors were perceived by participants as cost-prohibitive. One participant summarized the incongruity between recommended health behaviors and resources in real life: "I watch the Biggest Loser. Sometimes they'll show things during breaks or

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after the show about being healthy. I laugh because they assume people have unlimited resources, which isn't the case" (Alyssa).

RQ1.3: What Do Women Say Will Help Them Adopt Healthy Behaviors Related to their Highest Priority Health Issue?

Participants described four resources, including (1) reminders, (2) knowledge, (3) skills and (4) social support, that would help them adopt healthy behaviors related to their highest priority health issue. Evidence for each of these themes is provided below.

Reminders: On track and on time. Participants described reminders as an important first step in taking charge of their health. According to one participant, "I think a good start would be reminders, that would be good for everybody" (Savannah). Other participants agreed, "I would appreciate reminders" (Emma) and "I would be interested in reminders" (Jasmine) "so that I can stick with a diet or exercise" (Gianna). Specifically, participants noted that "appointment reminders would be really wonderful" (Autumn) and "I would like to get reminders because I always lose appointment cards" (Ariana). One participant described the importance of reminders in combating the temptation to put yourself last:

> Probably reminders would be number one on my list. Reminders about when we should be getting mammograms, pap smears, routine stuff. Preventative care. I think those reminders would be great. That would be really good. As women, we tend to remember everyone else's thing except our own. (Ava)

In addition to appointment reminders, "I would like reminders, maybe about going to the grocery store, getting a list for shopping. I would most like to get reminders" (Zoey).

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Participants recognized that reminders may not be enough. According to one participant:

> I think different people would feel connected by different modalities. Some people might like a little reminder that they can go check whatever website because there's new information but other people would like a little tip that catches their eye and are like 'I would use that and I wonder if there's more I can find.' (Madeline)

Other participants associated reminders with being forgetful or irresponsible. According to one participant, "I really don't need reminders. I keep a good datebook. I don't normally forget things. I buy my datebook at Staples. I want to be able to write in it" (Alexa). Another participant agreed, "I don't usually need reminders. We try to take an active role. We take that card, put it on the calendar. And then the doctor usually calls to confirm" (Khloe). These cases suggest that reminders should be approached cautiously.

Knowledge: Trigger the issue. Participants believed knowledge, facts, and statistics would most help them adopt healthy behaviors related to their highest priority health issue. In particular, participants thought that knowledge would serve as a "trigger" for a deeper investment in learning about the health issue. According to one participant, "knowledge is always good to know. It triggers your mind on certain things that interest or concern you. Statistics would probably trigger research in other areas" (Amaya). Another participant agreed, "knowledge would force me to think about it more, whether it is food, what I feed my kids, or other stuff" (Alexa). In particular, participants focused on the importance of "facts and statistics. It's a different way to look at things" (Ava). Participants said "I would like to get more information" (Zoey), "I'm a facts person, so I

would prefer information or knowledge" (Allison), and "I would like to get facts. This is why this happens or that happens. Straight-forward information about topics that I am interested in" (Emma). Another participant said, "I love facts. I love forwarding it on" (Aubrey) suggesting that the outcome of receiving knowledge is not only to conduct more research on the topic, but also to send that information to others.

Participants needed different types of knowledge, facts, or statistics based on their highest priority health issue. One participant understood knowledge as resources, such as local government resources. She needed local resources, "I would like to always have the right contact number, so when I need something I always have it around. I like to call. I hate calling and it's the wrong number. I don't get to speak to nobody" (Hannah). Another participant interpreted knowledge as "tips:" "in terms of emotional and mental health issues, it is important to give tips for people. A short, sweet, like 'here's a little tip for dealing with this'" (Madeline).

Participants who defined diet and exercise as their highest priority health issue area described a variety of informational needs. Some participants mentioned the importance of calorie counts listed on menus. Another participant said, "I would like to get a recipe every day. Or different information every Saturday morning, like information that I want" (Molly). One participant wanted more information regarding the ties between the food we eat and diseases: "I definitely want new information… about anything. Especially environmental toxins. What is good to keep the baby safe from stuff like that. Or eat this to prevent this disease" (Isabella).

Skills: Does this thing come with a manual? Participants strongly supported the importance of skills in helping them adopt healthy behaviors related to their highest

priority health issue. In particular, participants thought that skills and training would be most applicable to diet and nutrition, especially learning new recipes and how to make quick and healthy meals, making homemade baby food, and caring for infants. One participant summarized the need for skills and training regarding infant care, "there is a lot to be done with an infant and how do I actually do it? You know, does this thing come with a manual?" (Allison)

Many participants described the importance of building skills and learning techniques regarding diet and exercise. One participant said, "an exercise or something to keep me moving, absolutely. I think that'd be a really great skill" (Addison). Other participants focused on food, suggesting "I would like skills or techniques, like new recipes" (Aaliyah) and "I would love more recipes. I like to try stuff all the time. I am always going online to try to find new recipes. So, I would love something like that." (Mackenzie). One participant said, "I would love to get a recipe every day" (Molly). Another participant said, "I would love good recipes. I would love to change the kind of food I can make at home. I would love a good recipe that tastes healthy" (Morgan). Although some participants were open to trying new things, another participant cautioned that it is important to provide options, "I like to try new recipes but I'm picky. I want to try them but then I'm like 'I don't like that' so I'll substitute and stuff like that" (Gianna).

In relation to the highest priority health issue of feeding, many participants described making baby food as a skill or technique that they would like to "try." One participant said, "I would definitely be interested in making baby food if at all possible" (Isabella). Another participant said, "I would love to get different ideas for recipes. Especially for making your own baby food. I would try the Baby Bullet to make my own

baby food" (Emma). One of the most important aspects of skills and training for cooking baby food was the time cost. According to one participant, "in terms of making your own baby food - I don't think a lot of people do it. I think the main barrier is time. But, I don't know, you take 30 minutes and you get baby food" (Alexa).

Social support: It depends on the group. Participants' opinions were divided in assessing the role of social support in helping them adopt healthy behaviors related to their highest priority health issue. Participants uniformly suggested that social support was "important," however, some participants viewed this resource as uniquely beneficial to "others." Some participants were not interested in social support or only interested in certain types of social support in specific venues, such as online. Some participants strongly supported the need for social support to help them adopt healthy behaviors.

Many participants believed that social support was important for women to adopt healthy behaviors, however, they did not perceive external social support as personally relevant to them. According to one participant, "for me, personally, social support, is not needed. I'm in a smaller sect of the population, though. So I think others would need it" (Allison). Another participant agreed, "I have a ridiculous amount of social support, so I would rank it lower, but it is really important to those who don't have it" (Savannah).

For other participants, social support did not match their personality and they believed they maintained an adequate support system to help them adopt healthy behaviors. One participant said, "I don't need social support. I don't like to be in a group. I have a good support system" (Zoey). Another participant agreed, "Personally, I wouldn't look into anything like that. It just doesn't match my personality" (Amaya).

Other participants said, "I usually keep to myself. I have my own support system of friends and family" (Aaliyah) and "I support myself" (Morgan).

For many participants, accepting social support was based on a number of key characteristics of the group, including topic, location, and membership. Participants who identified exercise as their highest priority health issue particularly valued social support to help them adopt healthy behaviors. According to one participant, "to go exercise, absolutely, like I would want to exercise with a group of aerobics or something, but… I wouldn't really, I wouldn't attend a group session of something that, wouldn't be really my thing" (Addison). Another participant described the importance of tailoring social support to a key topical area because "I skip a lot of things. Even with invitations, I don't know if I would go. Unless it were breastfeeding, because I am really thinking a lot about that right now" (Amelia).

Other participants described the importance of providing social support in a convenient location, such as online. One participant described her interest in social support for diet and nutrition, "not if it forces me to have to go somewhere. I wouldn't leave. In an email thing, but not in person"(Alexa). Another participant described the importance of message boards and Facebook to provide social support for mental and emotional health issues, "I think message boards serve as support groups for a lot of people but not a formal online support group. I think actually even social networks like Facebook tend to kind of serve that purpose for people" (Madeline).

Many participants believed that social support offered a venue to help them adopt healthy behaviors related to their highest priority health issue. One participant said, "I love the idea of group meetings – We function better as people. We connect better"

(Aubrey). According to another participant, "social support is so important. To know you're not alone. It's always better to talk to someone about it. I would say my number one most important thing is social support" (Emma). Another participant agreed, "I would definitely be interested in something like that. I think that's important" (Isabella).

Participants described the importance of the sponsor in feeling comfortable with social support. One participant, who had been active in support groups for multiple sclerosis, described the neccesity of moderating social support and maintaining a positive environment. She said, "if there are like-minded folks, who are positive and supportive, it can be great. Sometimes support groups can turn negative. I guess it depends on the group. It is really important to have someone monitoring it, keeping things going" (Kaylee). Another participant said, "I would go, if there was a first-time moms group in a safe environment with other people who could empathize. Especially if I found out about it through my pediatrician, or the hospital" (Ariana).

Topically, many participants were interested in diet/nutrition or exercise and mental/emotional health. According to one participant, "I would be interested in being involved in a group, like a cooking class" (Mackenzie). Other participants mentioned the importance of accountability to a group, notifications and updates from a group, and sharing recipes in a group. Participants benefited from support groups for breastfeeding and emotional support. One participant talked about the importance of her support group in getting through a "blue" week when she came home from the hospital.

Social support emerged in light of a significant barrier faced by these women regarding balancing work and life. One participant said:

For me, the biggest health issue for new moms would be post-partum depression. Since so many women are working now. I know, for me, one of the ways I tried not fall into that was to surround myself with people after my last pregnancy. It's hard because everybody works. It's important for new moms to get out there with other people, support groups, and just be active and get out of the house. I think PPD is still very prevalent and it's hard and you feel isolated. With so many people at work, you don't have anyone to turn to. Just trying to find a group, get out of the house and be social I think is important. It's important to get out of the house. Those four walls were killing me. I remember one day, I told my husband, 'I got to go. I gotta drive. I just have to leave.' Fresh air and getting you and your baby out of the house. Even if it's just window shopping. You and your baby out at the mall. Get out of the house and interact with people. (Khloe)

Another participant described the importance of social support in family life, particularly social support for fathers of newborns. She said, "I was looking for [social support groups] for my husband and there doesn't seem to be a ton in terms of dad support groups. My husband jokes that's what bars are for" (Gia).

RQ2: How do Biological Mothers of Newborns Identify their Health Information Needs Related to their Highest Priority Health Issue?

Research question one described how biological mothers of newborns made meaning of health, including their highest priority health issue for themselves and for their newborn. The first research question also elaborated what motivates women and what barriers prevent women from adopting healthy behaviors related to their highest priority health issue. Finally, research question one described what women say will help

them adopt healthy behaviors related to their highest priority health issue (e.g., reminders, knowledge, skills, and social support). Research question two analyzes how biological mothers of newborns identify their health information needs related to their highest priority health issue. While research question one described the particular details of what participants need, research question two identifies broader conceptual linkages and associations between what women say they need and their health information needs related to their highest priority health issue. For these participants, health information needs about their highest priority health issue emerged in relation to (1) the intersection of maternal and child health. Specifically, information needs included (a) pediatrician support, (b) tailored information, and (c) mindful attention to health issues.

Intersection of maternal and child health. Participants' health information needs related to their highest priority health issue involve understanding the interaction of maternal and child health. According to one participant, "I need information about infant health, you know baby health, and my C-section recovery, and post-partum issues. That's what I would be most interested in" (Natalia). Another woman expressed the overall sentiment of many participants, "especially for first-time moms, when you get home, now what? Any input would be really welcomed" (Kaylee). Once these participants were discharged from the hospital, one of the first opportunities to receive "input" or to ask questions about their health information needs related to their highest priority health issue occurred during an appointment with the pediatrician. One participant described the sudden importance of the pediatrician in the lives of these mothers of newborns:

I will see my OB at my six-week check-up, but it's not like I see her every week

like I was while I was pregnant. Now, you switch roles and now you see the

pediatrician within a week of going home and then almost once a month. (Khloe)

The good doctor: Pediatrician support. Participants relied on their pediatrician to

answer questions about the intersection of maternal and child health. Participants asked

their pediatrician a variety of questions at the one-week appointment ranging from

infectious diseases (e.g., cold and flu), vaccinations, breastfeeding support, depression (or

"baby blues"), to family history and genetic predisposition. One participant asked her

pediatrician, "I worry about the baby. Will she get lupus because I have it?" (Abigail).

Participants discussed the importance of choosing a pediatrician. One participant

described a recommendation and the pediatrician's standing in the community: "I have a

pediatrician that my friend recommended. I have an appointment on Monday. He is a

good doctor. I trust him. Everybody knows him. He is a popular one" (Zoey). Another

participant described choosing a pediatrician through referral:

Our pediatrician is part of a practice group. They are really wonderful. They have

a lot of knowledge. We found them through referral. We asked friends and family.

We sat down with them before we made our final decision. We have a very good

relationship. They treat you individualized, not just another number. (Faith)

Some participants chose a pediatrician with a joint medical practice, "I decided that since

I go there and they have pediatricians too, that's where we'll go. I like that there are a lot

of doctors and midwives so you can usually get an appointment" (Alyssa). Some

participants preferred a pediatrician in the security of a larger practice, where a physician

was always available "on call." Some participants conducted an extensive search to

locate a pediatrician, which included physician ratings accessed online, geographic location preference, physician interviews, personal recommendations, and convenient appointment times (after work and on weekends).

Participants described the professional and personal characteristics sought in a pediatrician. These women emphasized the importance of the physician spending time with them and listening to their questions. According to one participant, "we want a doctor that will pay attention. We want a doctor that is concerned. For the pediatrician, they should expect questions from the parents. They care what is going on. It is not you're in and out" (Aubrey). Another participant said:

My pediatrician is good. I can talk to him. Especially with the way the world is now, everyone is running around all the time. He is patient. I feel comfortable asking him anything. He takes the time to listen to me. He makes sure all my questions are answered…He has a lot of patience. I have so many questions. So many concerns. He tries to understand. He puts me at ease. (Abigail)

Another participant emphasized the importance of excellent communication skills, "our pediatrician is a good doctor. He is very communicative. He's not trying to brush me off. He takes the time to talk with me" (Aubrey).

Participants also described the importance of being able to ask the pediatrician questions about maternal-child health. According to one participant:

My pediatrician - I have asked him a lot of questions, about vaccinations and breastfeeding. He sat down, we weren't just a number, he explained everything in detail. I could ask any questions I wanted to. And he has a website. You can email

anytime. He is committed to personal attention. He takes his time to answer your

questions. (Isabella)

Many participants described asking the pediatrician about feeding the baby and about

immunizations for themselves, such as Tdap and the flu shot.

Some participants felt comfortable asking their pediatrician questions about

women's health. According to one participant, "I would feel comfortable asking [the

pediatrician] any questions about my own health" (Olivia). Another participant said, "my

children's pediatrician, I can ask her any question at all, for me or my partner. Any

question or thought or concern. I would feel very comfortable asking her any question"

(Sophia). Participants emphasized the importance of the pediatrician asking questions

about both maternal and child health. One participant described her experience asking the

pediatrician about breastfeeding, "our pediatrician is very supportive. I honestly didn't

think she would go into such detail. It made me feel great. She's invested in me because

she's invested in the baby. It was a trust building experience" (Ariana). Another

participant said, "The pediatrician asked questions for her [the baby] and for me. She

asked how I was feeling. We talked about the C-section. I definitely would ask her any

question" (Emma).

Some participants were more comfortable asking pediatricians questions about

maternal health if the pediatrician also examined adults on a regular basis. According to

one participant, "if the pediatrician is dealing with children and adults then I would feel

comfortable asking them a question. My pediatrician asked how I was feeling and how I

was doing with the new baby in the house" (Aaliyah). Another participant described

seeing a pediatrician who is also an internist, "I respect her professional opinion and on a

personal level. I am going to ask her about an appointment for pertussis for myself. She also does internal medicine, so I feel like it is more bang for your buck" (Kaylee). Many participants described their pediatrician as family-centered. One participant visited the pediatrician with her other children before delivering the newborn. During the visit, the pediatrician asked about what was going on the children's lives and "talked about ways to help them cope with everything, things like that, so he cares about the family" (Addison).

Some participants described feeling more comfortable asking questions of their own physician. According to one participant:

I would wait for my own appointment. The pediatrician was wonderful but I would feel guilty taking time away from the baby's doctor's appointment to focus on my health or mental health. I would wait and speak with my own doctor. My own doctor and I have a certain rapport already established as well. I'm not sure I would feel as comfortable talking about it with the pediatrician. (Natalia)

Another participant described the medical "separation" of mother and newborn, "the pediatrician hasn't really asked about me as the mom. The OB has kind of said 'you're our problem' and 'she's your problem' to the pediatrician. Now that we are separate entities" (Gia). Finally, one participant described the value of pediatricians investing in women's health:

I guess we just don't know what the pediatrician knows about 'mom care'. I know the last time I was in here I was on a pain medication that made me loopy. I had a conversation with the pediatrician that I don't recall and he admitted later that he went out to the nurse and said "I don't know much about mommies, but that mommy isn't doing well and you need to get in there." I would feel comfortable

with that. If after the baby, the pediatrician asked "and how are YOU doing?"

That would be like a 2 for 1. You don't see your OB as much after and you do see

your pediatrician a lot. If they were trained in that to at least recognize some signs

that someone is going through something. A lot of women I know wouldn't

actively call their OB and say I'm having a problem. If the pediatrician looked

and said, "you look tired. Are you feeling alright?" That would mean a lot."

(Khloe)

Tailored Information. Participants expected and sought tailored information

regarding their highest priority health issue. According to one participant, "I really like

tailor-made information and tips" (Molly). Another participant agreed, "I'm picky. I

don't want a ton of information coming every day. I want information about what I am

directly affected by" (Lilly). Participants described seeking information tailored

specifically to their body. One participant said, "some blogs, I don't know, I don't trust

them or I don't believe what they say applies to my body" (Stella).

Other participants described their health information needs related to accessing

tailored information. Many participants received emails from the *Baby Center*, which

provide information about the baby's development and growth milestones. Some

participants believed that the *Baby Center* emails suggested an opportunity to "take it

further because you're personalizing it. The best information would be connected to an

online account, where you could sign up for either email or text. You could set up a

calendar online" (Kaylee). Another participant agreed, "I would like to be able to sign up

for the things I am interested in, like diet, exercise, even making my own baby food and

get regular alerts sending me to a website for more information" (Khloe).

Mindful attention. Participants described their health information needs related to their highest priority health issue as essential to help them stay "on top of it" and to keep these issues "in the back of your mind." According to one participant, "it is important to get health information out there to keep in the back of your mind. You can be enlightened" (Aubrey). Another participant agreed, "It is good to know health information, the more information, knowledge, health-wise, the healthier you are. You can always keep it in the back of your mind" (Sabrina). One participant described the importance of staying 'on top of things', "just for women to be on top of things. To know to ask their doctor questions. Would make the difference between women who are cured versus not being able to be cured because it is too late" (Sophia). Another participant agreed, "just keeping on top of everything. Campaigns just keep women and mothers on top of theirselves and their kids" (Amaya).

RQ3: How do Biological Mothers of Newborns Make Meaning of Communication Channels Regarding their Highest Priority Health Issue?

Participants made meaning of communication channels regarding their highest priority health issue by (1) questioning the "expert" through evaluation of the source and content of health information and (2) personalizing their use of communication channels. Evidence of these themes is described below.

Questioning the "expert." Participants questioned the role of "expert" opinion by evaluating the source and content of health information. The source of information remained a key factor in how these women assessed the credibility of communication channels. At a baseline, participants described the importance of a communication channel avoiding spam or "selling something." According to one participant, "I prefer the

National Geographic studies where they try to put information or a story out there rather than sell you something" (Gia). At the same time, participants resisted traditional understandings of the role of the expert in health information by questioning, "who are the experts?" In addition, participants evaluated the content of health information by thinking critically to evaluate evidence presented through multiple channels and analyzing the information to make a personal decision.

Participants defined an expert in a variety of ways. Participants noted the importance of evaluating the sponsor of the website. According to one participant, "I also look to see if the website or article is copyrighted, like to a doctor or university. That would make it most accurate, I think" (Mackenzie). Another participant agreed:

> The most important thing is the source, who the information is coming from. You hear one thing is good for you one day and the next day it's not. You want the latest, to know that a health provider, researcher has investigated it thoroughly. (Kaylee)

Participants identified and trusted local sources. According to one participant, "I like websites that make more sense and are more knowledgeable, like Women & Infants Hospital, Rhode Island Hospital, or a health clinic. There are so many different opinions. It is important for a website to be reliable" (Stella).

In some cases, the sponsor of the communication channel superseded the qualifications of the source. In this way, the name of the website emerged as a primary approach to evaluating the communication channel. One participant said "I prefer big websites, either national or local 'names'" (Lilly). Some participants preferred hospital websites compared to individual doctors. One participant said, "I trust the Mayo Clinic

because that is an accredited place as opposed to some sort of wackadoodle. I don't like personal testimonial health websites that is just your everyday person"(Isabella). Another participant expressed her preference to search for health topics online and seek articles, "related to the hospital, or a medical school, that has done research. A lot of sites will say this is according to Dr. So-and-so, who the hell is he? I want to go to the source of the information" (Savannah).

Many participants described "staying away from" poor sources. Participants said, "because I'm in school, I know what to stay away from. I won't use Wikipedia or anything like that. I try to stay on major websites" (Alyssa) and "I use the Internet quite a bit. No real specific sites. I just search and try to find a reliable source of information like the NIH, or something more reliable than Wikipedia" (Natalia). One participant described how to assess the reliability of a website if you are not familiar with the name, "I might say WebMD, but I guess I haven't always gone there. I just Google the topic. Definitely not Wikipedia. Anything with a .org" (Adriana).

The accessibility of varied communication channels, ranging from organizational websites to community discussion boards prompted participants to rethink their definition of an expert. One participant summarized the struggle to define her understanding of an expert:

> I mean, someone who's writing an article is probably a mom and probably not an expert. But define an expert, to a mom…an expert is probably someone who's researched it more and then, I guess, if you're a mom, I guess it makes it even more, it makes you even more credible than somebody who isn't. (Adriana)

Many participants valued the input of layperson expertise. Participants most valued this expertise when it was in the form of storytelling or a personal narrative. Participants most appreciated blogs where someone was "just telling her story." According to one participant, "I enjoy reading those because it is someone's story. You can take what you want from it" (Gia).

Participants evaluated the content of health information by thinking critically to analyze the information. In order to assess layperson expertise, participants used multiple communication channels to "cross-check" or "weed through" conflicting information. According to one participant:

> Actually to be honest, I really do like message board kind of things. But I feel like I'm decent at weeding through…knowing what is opinion and taking everything with a grain a salt. But sometimes it's really helpful to hear what other people have been through and how they've handled it. That doesn't necessarily mean that is the best, most proven answer, but if you explore enough, you can find what works for most people. That is the value of that. (Madeline)

Another participant said, "personal experience is important to me. If another mom is writing about something I haven't experienced, I value that. And then maybe go to WebMD and try to confirm. Cross-checking. I love new ideas, good ideas, other mom's ideas" (Khloe). Another participant described the importance of understanding that everybody is different, "I think everything is different for every person. So, [comments or blogs] are sometimes helpful, but I recognize that everyone is different. So, what works for someone else might not work for me" (Mackenzie).

Personalizing communication channels. Participants made meaning of communication channels regarding their highest priority health issue by personalizing their use of traditional mass media channels and through the intersection of new media, mass media, and interpersonal communication channels.

Participants personalized their use of traditional mass media by selecting specific channels related to their culture, religion, or point-of-view. According to one participant, "I only listen to NPR on the radio, so I feel like I get the same messages over and over again" (Lilly). Another participant agreed, "on the radio, I mostly listen to music, but sometimes I will stop on NPR if I hear messages about childhood obesity" (Allison). One participant described her choice of radio station based on religion, "I listen to Christian radio. There is a family doctor, who has a radio talk show, so, I listen to him sometimes. He talks mostly about lifestyle. He gives good advice" (Amelia).

Participants described the intersection of new media, mass media, and interpersonal communication. These women used mass media to find new media, new media to find mass media, and interpersonal communication to find media channels. Participants discussed a lack of boundaries between communication channels. One participant said, "I would love to get Parenting [the magazine], either online or a free subscription. I would like the online version so that it would be at my fingertips" (Lilly). Participants discussed using new media, such as a website or television show, to find book recommendations. One participant found book recommendations by Dr. Oz and Andrew Weil on the Dr. Oz website and watches the Dr. Oz TV show. Another participant said, "I saw Dr. Ornish on a TV show. Dr. Ornish was the diet book I read

when I got out of college to get a grip on what I needed to eat. I enjoy reading books as a resource" (Gia).

Although participants described "hearing about" books on television and the radio or seeing recommendations for books in a magazine or website, many participants described the inverse relationship, learning about a website or mobile application through a book or magazine. In other words, participants described an intersectional approach to learning about and accessing new media and traditional forms of media. According to one participant, "I used magazines to find places like TheBump.com" (Gia). Another participant suggested that she "almost doesn't need books anymore," because she "ends up reading the app and not the book. They have apps for everything. I generally like books to look stuff up, but it's so easy when you're lying in bed to look something up on an app" (Camila).

Doctor's offices in Rhode Island displayed the intersection of new media, mass media, and interpersonal communication. Participants described their use of the online Health Tracker to stay connected to their physician's office. According to one participant:

> With my doctor's office, I can email them. They use Health Tracker. So I can email to set up an appointment. They are trying to do everything online. I can get my lab results online. I can access my billing online. In my doctor's office, everyone had to sign up for it. You can sign up for an appointment online. I really appreciate that you depend on the information because it comes from your doctor. I would rather get an email than anything else. (Lilly)

This online system can also prompt patients to seek interpersonal communication over the telephone. One participant said about Health Tracker that sometimes, "you have to

call and say, 'I see that my lab results are in.' But I love it. I go on for updates about my last visit, my BP, weight, any lab results and if the midwife ordered anything" (Alyssa).

Participants described the role of interpersonal communication in directing them to media, such as books. For many participants, the doctor served as their strongest tie to traditional media channels, such as magazines and pamphlets. According to one participant, "I don't really read about health. At the doctor's office, I have seen pamphlets. They are always asking me to read pamphlets…and I do" (Mackenzie). Another participant agreed, "at the doctor's visit, the waiting area is full of stuff with pamphlets that I could read" (Hannah). Participants also described accessing magazines at the doctor's office, "I only see magazines in the doctor's office" (Jasmine). Although many participants did not subscribe to magazines, the traditional media available though the doctor's office played an important role in the health information they received. According to one participant, "I always read magazines in doctor's offices, and get them from friends, but I am not into subscribing to magazines" (Savannah). Another participant described the importance of interpersonal communication in accessing media. One participant said, "I would also go to the library if I had a question. I would ask them if there are books on it, I would trust books" (Rachel).

RQ3.1: How do Biological Mothers of Newborns use Communication Channels Regarding their Highest Priority Health Issue?

Biological mothers of newborns use a variety of communication channels to seek health information regarding their highest priority health issue. Participants discussed their use of traditional mass media, new media, and interpersonal communication channels to find and discuss health information. Specifically, participants used the

following communication channels: (1) mass media, (2) social networks, (3) mobile

applications, (4) text messaging and email, (5) Google, (6) community forums, and (7)

interpersonal communication with physicians. Evidence of these themes is provided

below.

Fear and loathing in HD: Resisting mass media. Participants learned about

their highest priority health issue through books, magazines, television, and the radio. In

the previous section, I described how participants personalized their use of

communication channels, such as the radio. In this section, I describe how the

personalization of mass media, particularly magazines and television programs, may

cause fear and resentment among these participants.

Participants personalized their choice of magazines related to their highest priority

health issue. Participants read about health issues in fashion magazines, including *Cosmo*,

Scientific American, parenting magazines, fitness magazines, such as *Shape*, and

magazines focused on specific health issues, such as diabetes or multiple sclerosis.

According to one participant, "in terms of diet and getting in shape, I read about those

issues in women's health magazines, *Elle*, *Redbook*. I also get *American Baby* and

Parenting Magazine. Oh and *Oprah Magazine*" (Isabella). Another participant said,

"sometimes I read *Shape Magazine*, but I don't subscribe" (Molly). One participant

described how magazines may overburden readers with what they should do to be safe

and healthy, "they cover breastfeeding and how to make them sleep. There's so much

stuff they cover, I can't even remember. I read so much about it. The strollers to use, the

safety products, what not to do, what to do..."(Adriana).

Participants described the role of mass media in shaping the health issues that concern them. According to one participant, "I read in magazines that over feeding your baby can cause obesity. I also read that pacifiers lower the risk of SIDS, and that certain bottles can help" (Olivia). Another participant said, "I read *Scientific American*, the whole magazine, every month. They talk about vaccines a lot. You know, vaccinations, how efficient they are, the development of new vaccines, everything, anything" (Alexa).

On television, participants heard about their highest priority health issue on the TODAY show, msnbc TV, FitTV with Jillian Michaels, *The Dr. Oz Show*, *One Born Every Minute,* and *I Didn't Know I was Pregnant*, as well as commercials related to health. Participants resisted the cultural assumptions and understandings of women's health portrayed by these television programs and advertisements.

Many participants described a culture of fear associated with shows about health issues. According to one participant, "I watch the Birth Channel on TV. I watch *Mystery Diagnosis*. I worry; do I have something [disease] that nobody knows about?" (Aubrey) Another participant agreed, "on TV, I see that show, *The Doctors*, I don't watch it. They say everything is bad for you. It makes everyone into hypochondriacs" (Caroline). In particular, participants described the role of fear in television programming while they were pregnant. According to one participant:

> During my first pregnancy, I would sit and watch a lot of TV, especially
>
> pregnancy stories. You see a lot of complications through the television. It made
>
> me very frightened. I think you need to be careful what you watch, so you don't
>
> think that what you see is what is going to happen to you. I try not to watch too
>
> much TV, especially reality shows, like a *Baby Story* or *I Didn't Know I was*

Pregnant. Even though it is about women and what they go through, their labor

and delivery, it gives fear to you, and of course you don't want that. (Sophia)

Another participant said, "there are some interesting shows, like *One Born Every Minute*,

it's a real life hospital. That scares you. I'm not sure if that is the best place to get

information" (Savannah).

Participants expressed divergent view points about commercials and

advertisements on TV. Many participants described watching advertisements by a law

firm or offering legal representation following the use of prescription medication. In

particular, participants noted that many of these advertisements are aimed at mothers of

newborns with a birth defect. Some participants thought that these advertisements offered

an important public service. According to one participant, "on TV, I see commercials,

'while you're pregnant if you took this pill or that pill, it could have caused problems.'

[What do you think about those commercials?] I think it's good, so people know what

could happen" (Olivia). Another participant agreed:

> I see commercials about health issues, especially about taking medicine while
>
> you're pregnant. You know, commercials for lawsuits. I bring this up because,
>
> when you are in the doctor's office, they say, "oh, don't worry about it." Then
>
> later, you find out, because you took medicine, like, I don't know, Zoloft®, it
>
> could be why your baby has a heart defect. How can you not wonder, did that
>
> cause it? Did I cause it? In my opinion, doctors push drugs on you. (Abigail)

Other participants expressed disgust about those types of advertisements. One participant,

who made a choice to take antidepressants while she was pregnant, based on the

recommendation of her physician, described the implications of these ads:

[Do you see health information on TV?] "No, except for those stupid commercials about "if you took this antidepressant while you were pregnant, call now." I hate those commercials putting bad information in people's heads. They don't make me nervous, they just put bad information out there…I knew what the risks were so they didn't make me nervous, they just made me mad. (Camila)

Participants also described seeing advertisements for medications. These women were uniformly opposed to these types of ads. One participant said, "I mostly see ads for medications. Some of the medication ads I don't pay much attention to. They are obviously trying to sell a product, advertising to the common public, I'm less in favor of that" (Allison). Another participant agreed, "I see a lot of ads for this medicine or that medicine. I don't trust the media, whatever they are saying" (Morgan). Television programs and commercials also offer the potential to provide vital knowledge and education. According to one participant, "I watch TLC. That's how I knew about shoulder dystocia when it was happening. I watch the Health Channel. I also saw a commercial about pertussis on TV" (Emma).

When your grandmother's on Facebook: Repurposing social networks.
Facebook emerged as the most widely used new media platform among participants. Most participants (36 out of 44) maintained a Facebook account. In contrast, only three participants maintained a Twitter account. Even those who did use Twitter perceived their investment with the new media platform as inferior to other social networks. According to one participant, "I am on Twitter, but I don't like it, so I don't use it. It's too different for me. I don't like talking to complete strangers in that sense where it's not anonymous" (Khloe). Another participant agreed, "I am not on Twitter as much as I am

on Facebook. I think Twitter is more for keeping up with celebrities, following celebrities. I do follow *Mythbusters* and *Ghost Hunters*. More nerdy stuff, like Comic-Con" (Caroline). Other participants described the platform as an outreach mechanism for celebrities. According to one participant, "I am definitely not on Twitter. I find it so silly. I think it is more of a celeb thing for them to make money" (Isabella). Another participant agreed, "I'm not on Twitter. I see that more as to follow a celebrity" (Giuliana).

Participants shunned other new media platforms, as well. Participants did not use location-based social networking platforms, such as FourSquare. According to one participant, "I don't want people to know where I am, that's stalkerish. Some of my friends do it and I know where they are every minute of the day. It's kind of like, 'who's at your house?'" (Khloe) Participants also avoided photo-sharing platforms, such as Flickr.

Although YouTube was not widely used among participants, this video sharing social network was highly praised by a small number of women. According to one participant:

> My boyfriend, when I was in the hospital, he actually went on YouTube and learned how to swaddle a baby and change a baby. He's not a reader. He is a visual learner. I did it for breastfeeding. They show you the positions. How to express the milk. How the baby could latch on. I also looked up videos for what to do for a fussy newborn. How to hold the newborn. Techniques to soothe the baby. Stuff like that, I use YouTube. (Isabella)

Another participant agreed, "YouTube can be a great resource. It can be nerve-wracking to bring the baby home for the first time. Even bathing the baby the first time" (Kaylee).

Participants described a range of uses for Facebook related to their highest priority health issue, including finding health recommendations, seeking support regarding health conditions, and connecting with health organizations. Participants connected with old friends, new friends, best friends, significant others and family on Facebook. Some participants described the importance of connecting with acquaintances or old friends to seek advice regarding health issues. One participant described who she connects with on Facebook:

> I would say it goes back to people I went to high school with because we are at similar points in our lives right now but we're not necessarily close friends anymore. The people that I really seem to ask questions to or answer questions for seem to be those people you wouldn't really have a connection with anymore but you did know them. You have similarities with them that make you at the same point in your lives but we're just not close enough to know a lot about each other but we can still share experiences that are still helpful. (Madeline)

This common experience among participants suggests that Facebook favors the strength of weak ties in relation to participants' highest priority health issue.

Participants sought recommendations related to their highest priority health issues on Facebook. Participants described the use of Facebook to "put it out there" to their social network when they were seeking a new physician, a new diet, or the answer to a host of health related questions. According to one participant: "when I was switching pediatricians, I definitely put it out there, asking people whom they had had success with. You see a lot, especially moms, asking parenting questions and health questions and stuff like that on Facebook" (Melanie). Another participant said, "I don't mind offering health

information to people who I don't talk to on a regular basis, because it is important"

(Savannah). Although many participants used Facebook to seek health recommendations,

some participants avoided the topic of health. According to one participant, "I never see

any health related stuff. I might read it if I saw it, but I never see anything like that"

(Jasmine).

Participants used Facebook to seek support regarding health topics. Participants

described Facebook as a place to seek social and emotional support. One participant

offered a particularly poignant story of using Facebook as motivation through labor and

delivery:

> We actually used Facebook during labor. I hadn't slept since Saturday morning.
>
> On Monday, Tom went on Facebook and told everyone what was going on and
>
> said, "Gia needs support." That was one of the first times we had used Facebook
>
> to try and get support to cheer us on. So when I was grumpy on Monday night, he
>
> read people's encouragement to me and knowing that everyone was wishing us
>
> well and hoping for us and can't wait to meet her and all that. To me, that's more
>
> of what Facebook is for, than saying "I went to the ballpark" or "I'm chewing
>
> gum." It's funny because my husband said this morning, there were so many nice
>
> comments and people asking for updates and now that we are through it, they've
>
> already moved on to something else. But what about Gia? We're no longer the hot
>
> topic. It's all over. I'm good, she's good and Facebook has moved on. (Gia)

Some participants sought support outside of their personal social networks on Facebook.

One participant described joining a community on Facebook that offered a completely

separate experience from her family and friends. She said:

On Facebook, I'm part of a January 2012 moms group. They don't call the group

anything 'pregnancy' because there are people who are six or seven weeks

pregnant and asking 'how can I tell so-and-so that I'm pregnant?' We called it, 'I

love shoes' because [your Facebook friends] can see what you're subscribed to.

No one outside the group can see what you're writing, though. So you feel okay,

saying, I'm having this issue and you're not afraid to write because your friends

can't see it. (Alyssa)

Participants connected with organizations on Facebook. Many participants

described reading posts about childhood diseases on Facebook, such as juvenile diabetes.

In many instances, friends provided links to these organizations or pages. According to

one participant, "I also connect with St. Jude's. Really anything that has to do with

children's health- cystic fibrosis, umm, spina bifida. Just to understand and to support

friends who may have children with those issues" (Emma). Another participant said, "I

do have old friends and new friends on Facebook. I hit the like button geared toward

pregnancy or consignment shops in my area, really everything geared toward pregnancy

and baby" (Faith).

Participants explained how they decided whether or not to join a group or support

an organization on Facebook. One participant said, "I would be more prone to joining a

group associated with a national association, or something locally known, like a Women

& Infants new mom's group. I would trust and respect that. I wouldn't just join any

group" (Kaylee). Another participant described why she "stays away" from organizations

on Facebook. She said, "I stay away from corporations on Facebook, they post crap. I

purely read and post status updates. I don't like Farmville or Target. I don't like when people post 25% off this or that" (Caroline).

Some participants did not feel comfortable discussing health topics on Facebook. According to one participant, "I guess I would say strictly family on Facebook is who I talk to. We don't ever talk about health issues, nope, no health information" (Sarah). Eight participants avoided Facebook. One participant said, "In the past, I did have a Facebook. It's not something that is interesting to me right now at this time in my life. I'm just not interested" (Sophia). Another participant said, "I'm not on Facebook. My friends are addicted. I think they are on it for the wrong reasons. I think Facebook is confusing real life" (Aubrey).

There's an app for that! For many participants, pregnancy offered an opportunity to try new media and mobile applications for the first time. Participants used a variety of health related apps. Specifically, many participants used the *Baby Center* App, running and dieting apps, and a contraction timer app. Participants shared a common belief that there would be an app related to their highest priority health issue, even if they didn't use one yet.

Most participants described their reliance on a mobile app during pregnancy and to care for their newborn. According to one participant, "I have the *What to Expect* app. It carried me through my pregnancy. I downloaded a contraction timing app during my pregnancy." (Madeline). Another participant said:

I had the *Baby Center* app when I was pregnant to get updates on my pregnancy. Now that the baby is born, I have *Baby Connect*, so I can keep track of doctors visits, feedings, baths, everything. We love *Baby Connect*. It is user friendly, easy

to understand. They have timers, you can set a timer to remind you for the next

feeding. And it keeps graphs, so you can trend things as well. (Allison)

Participants described the use of apps for a variety of purposes. One participant found an

app able to create a book based on the user's journal. She said, "I used a pregnancy app -

it was kind of like a pregnancy journal. You could write things down. You could take

photos. And you can make it all into a book" (Lilly). Another participant described the

benefit of using an app over traditional pen and paper, "I have an app for tracking the

baby's feeding and sleeping. It is so much easier. We would have to write it down. The

app reminds me when to feed her. It's helpful to keep track of newborn information"

(Olivia).

Many participants used an app related to their highest priority health issue of diet

and exercise. According to one participant, "I have a Nike app for running, it measures

how far you go" (Autumn). Another participant described how she finds a range of health

related apps, "I am looking for tools and references and utility. I find apps by going to the

App Store and searching. I will think, I need something that does this… and I search for

it" (Caroline).

Some participants did not own a smart phone capable of running mobile apps.

According to one participant, "I just have the simple plan and the simple phone. It's not

really an app kind of phone" (Isabella). Another participant said, "my cell phone doesn't

do apps. It's an old phone" (Hannah). Other participants chose not to use certain mobile

apps based on privacy concerns. One participant said, "I worry about losing my phone. I

worry about all the personal stuff too. I'm definitely worried about losing my phone in

case someone else sees it" (Aubrey).

Health on the go: Text and email. Texting emerged as a ubiquitous form of communication among participants. Thirty-eight of 44 participants paid for unlimited text messages. The remaining participants purchased a limited number of texts, such as 250 messages per month. Only a few participants did not text at all. One participant said, "I text all the time, that's all the time, it's my preferred method of communication" (Savannah). Participants described texting with their friends and family. Many participants described their husband or significant other as the person they text with most frequently. Many participants regularly received text messages from organizations, such as doctor's offices, pharmacies, schools, and to remind them to pay their bills (online). Participants suggested that they would be comfortable receiving text messages from a health campaign.

Participants preferred texting as an overall form of communication for a variety of reasons. Participants believed that text messaging offered increased flexibility. Many participants suggested that a text message is preferable to other forms of communication because it is easy to access and easy to save for future reference. According to one participant, "I text more than I talk. Text is good because it stays there. If I need a phone number, I'll have it in a text" (Abigail). Another participant said, "I don't check my email, but as the texts come in, I read them. And I read them more [than emails]" (Gianna).

Participants said that they would be more likely to act based on a text message. In particular, participants suggested that they would be more likely to forward a text message to family or friends. According to one participant:

A text campaign would be excellent. You could get a quick text. You don't have to read it. You can delete it. You can forward it to someone else. You can read it, save it, or forward it. If it had vital information, I would forward it to my sisters. I would forward texts to my sisters, or my friends. We could start a texting chain message. It feels good sending it on, sharing important information. (Aubrey)

Another participant agreed, "I think text messages are the easiest, most direct way to reach me. I would be more likely to read it and either respond to or act on whatever information I had received" (Natalia). One participant described receiving text messages from her closest friends, husband, dentist, and online bill reminders. She said, "I would rather have someone texting me information because I can choose when to look at it, choose if I want to respond to it or not respond to it" (Madeline).

Text messages would also be an important way to reach participants who do not have mobile apps or Internet on their cell phones. According to one participant, "a lot of people, nowadays, they text. I don't have Internet on my phone, having something through text would be a lot more useful to me. Anywhere I am, I could get information, wherever I'm at" (Sophia).

Participants discussed their highest priority health issue through text messages. According to one participant, "I text with friends. We text each other about going walking or about the food we eat" (Molly). Other participants used text messages to communicate about their physicians, "I text a lot about health with my sister-in-law and we go back and forth about what happened in the doctor's office" (Hannah).

Participants suggested that one of the best uses for text messages could be reminders for vaccinations or up to the minute information about infectious diseases.

According to one participant, "I'm open to getting text messages about health issues. It would be especially good to find out about current news, like if there was an outbreak of whooping cough in your area, to keep you in the loop" (Emma).

Participants suggested that they would be comfortable receiving text messages from a health campaign. Some participants did not have a preference for how frequently they would be willing to receive text messages. Of those participants who expressed a preference, seven participants indicated that they would prefer to receive a text message every day. One participant said, "sure, I would get a health text message, once a day. I can always save the text with the number in it" (Aaliyah). Of those participants who expressed a preference, eight participants indicated that they would prefer to receive a text message once per week. One participant said, "I would like to get text messages on my phone because it's always good to read something new. But I wouldn't want it to, not to drive me crazy. Maybe once a week" (Jasmine).

While in the minority opinion, some participants did not embrace texting. According to one participant, "texting, I don't pay much attention to…I just use my phone to get in touch with my husband. Since I've been [in the hospital], it's been dead and it doesn't matter" (Amaya). Another participant said, [So, you don't text?] "Correct, I find it annoying" (Khloe). Even among participants who were avid texters, some were opposed to receiving text messages from an organization or campaign. According to one participant, "I have unlimited text messages but I would not want to get health messages via text. I think it would be bothersome" (Amelia). Another participant said, "I am not interested in receiving text messages from anyone other than friends and family. I think texting is personal. It should be private" (Morgan).

While most participants preferred receiving health messages through text, some participants were more amenable to an email. According to one participant, "I would prefer health information in an email, so that I can check it on my own schedule. A text would make me stop what I was doing to check it. That can be intrusive" (Allison). Other participants were more accustomed to receiving health messages through email. One participant said, "I get updates through email. I prefer email. I have been getting email throughout my pregnancy about the baby. Updates on the baby" (Mackenzie).

Google It Up. Participants described the Internet as their primary communication channel to seek information about their highest priority health issue. When asked where they go to get more information about their highest priority health issues, participants said, "Probably the Internet. I always turn to the Internet to do research" (Faith) and "the Internet. That is the hugest one"(Isabella). One participant described the ubiquity of using Google, "I do that for everything – go online. I Google it. That is what everyone is doing" (Abigail). Another participant said "I usually start with Google and say, what do I want to know?" (Gia)

Participants employed Google to search for health information regarding their highest priority health issue. For most participants, Google was second nature when seeking answers to health questions. According to one participant:

I Google everything up. I'm always looking online and researching. The whole time I was pregnant, I had a whole bunch of things going on. I would Google it up and see, you know, what was good or bad. I'd Google it up and then from there look for a doctor or something. (Hannah)

Other participants agreed, "mostly, we, obviously, Googled" (Addison), "I Google search and see what comes up" (Alexa), and "sometimes I go to the computer, to see if I can find the answer. I go on Google, I type in the question I have, to see if I can get the answer" (Destiny). Participants used other search engines in conjunction with Google. Participants said, "I Google it. I Bing it." (Caroline) and "I ask Google. I just straight out ask a question. I always use Bing or Google" (Aaliyah).

Participants described ways that they evaluated health information found through Google. According to one participant, "I use Google or Ask Jeeves. That gives me options to pick from. I look for similarity to the question that I asked. I look at a couple of websites and pick the best advice from each site" (Aubrey). Another participant said, "I Google. Everybody uses Google. I also use Ask.com. I browse through options. I look for the closest date. I think the more recent stuff has more accurate facts than older dates" (Rachel). One participant said, "I go online. I Google to get information. I see how its set up, how the website is set up, the look of it and then I decide how much to trust to it." (Amelia). Another participant said, "I don't want to go online to get information because it might not be right. I Google, but I don't know what sites are secure, it could be a random person. I don't trust it" (Olivia). One participant suggested that Google did not provide the research caliber needed to find information about her highest priority health issue: "I look online at things, more research based stuff than just simply Googling" (Madeline).

Specifically, participants described using Google for their highest priority health issue related to diet and nutrition. According to one participant, "if I was looking for recipes and stuff like that, Google searches, like what have people eaten when they are

trying to eat healthier. I've definitely spent time Googling lunch packing ideas and stuff like that" (Madeline). Other participants said, "I will go online and search for diets, maybe nutritionist ideas. I go online. On websites" (Jasmine) and "if I had a question about my diet, I would go online. I am online everyday" (Molly).

Cultural voyeurism: The trouble with playing expert. Many participants used and valued community forums and discussion boards. Although participants benefited from the stories and opinions of other women, they rarely participated in the conversations. In many cases, participants avoided making comments, asking questions, or answering questions. These women described a lack of expertise or an unwillingness to participate because they did not feel qualified to adequately answer questions or provide input. This section describes participants' opinions of community forums and their participation behavior.

Many websites include a discussion board, community forum, or commenting section, where women can interact with one another. All of these features are discussed interchangeably in this section. One participant described the use of community forums on websites such as the *Baby Center* and the *Daily Kick* where women can post their comments and experiences. She said, "If you have questions or concerns, you can look at what other people went through and how they dealt with it. You can write something that is concerning you, and if you feel different, you can leave your comment" (Sophia).

Some participants described community forums as the preferred communication channel regarding their highest priority health issue. According to one participant, "in terms of women's health, the best thing would be a forum - where you can select what you want to see, exactly what information you want and need" (Lilly). Another

participant described being "really involved" with the *What to Expect* online community during her pregnancy. She said, "people feel good about being connected to other people who are going through the same thing as them. And now online it's the most easy, efficient way to access information" (Madeline).

Participants viewed community forums and discussion boards in terms of interpersonal communication. One participant described reading other people's opinions online, "I read the forums, the commenting. Whenever I am on a website, it is like getting information through a friend who would give the best answer. Well, I read this, and I get their opinion on that" (Emma). Another participant agreed, "it's just moms giving their home stories. I read them and some of them is true. It's pretty good…Like if you ask a question, it's really other moms giving their stories and other moms asking questions" (Hannah).

A small number of participants actively offered feedback on discussion boards. One participant described contributing to a discussion board for women with due dates in February 2012, "it is good to talk with people who are all going through the same thing as you. I answered questions for new moms. I asked questions. It was really helpful to get some peace of mind" (Emma). Another participant described a similar experience, "I read the comments. It's always good to see what others think. I've commented a couple of times. I hope that somebody else will read it and get some good information. I don't mind sharing my experience" (Aubrey). One participant discussed participating freely, "I went on the Bump.com and I would participate on there. If somebody asked a question, I would answer, or ask a question" (Alexa).

Some participants commented only when they had an expert opinion on a certain topic. According to one participant, "I ask questions. I don't typically answer unless I am really confident in what it is" (Camila). Another participant said, "answers on yahoo.com is pretty good. I'll answer those sometimes, especially if there are young moms on there that have pretty basic questions that I can help answer" (Khloe).

Participants commented when they felt they had a unique experience to contribute. One participant described why she rarely contributes to message boards:

> I do sometimes, but probably not as much I should, considering I use them a lot. [Why not?] If I have an experience that I feel particularly connected to that I feel could really be helpful to other people, or maybe is unique, or something I've needed that I've really struggled through, back then I ended up finding a good solution, then I would probably want to share that. (Madeline)

Another participant described the "one time" she participated by responding to a thread about pregnancy and MS, "someone was asking if breastfeeding would hold off relapses. It actually happened to me. I didn't want this one mother to think she was protected, it is still possible to have a relapse" (Kaylee).

Other participants described their hesitation commenting on community forums or discussion boards. When asked if she ever contributed to discussion boards, one participant said, "once in a while, but I try not to. [Why not?] I don't want to put my opinion out there. Even though I like to read theirs. I don't know. I don't want to influence someone else" (Alyssa). Another participant said, "I sometimes go on websites with blogs. Not many blogs. But, I like to see what others are saying. What other moms are saying. I don't participate though" (Amelia). Participants valued the opportunity to

"talk" to other women who have experience with health topics, even though they often refrained from asking questions or posting comments. While some of these women actively resisted participating in community forums, others suggested that "it just never dawned on me" to post comments.

Some participants did not find community forums or discussion boards helpful in their search for information about their highest priority health issue. One participant described the value of discussion boards as a question of validity, "you have to read through 50 random people's comments. I did initially go online but there are so many things that contradict each other. I didn't want to start guessing. I was always looking for other sources" (Isla). Another participant said, "I'm not a big fan of community forums. I don't really look for them. I'm looking for facts, not people's experiences" (Caroline).

Resisting the medical model: Interpersonal communication with physicians. Participants described their interpersonal communication with their physician as a central communication channel related to their highest priority health issue. Many participants discussed their highest priority health issue with their doctor or health care provider. Some participants only discussed this issue with their doctor or health care provider. One participant described her intent to talk to her doctor about the availability of birth control options and what would be best for her to use, "I am planning to speak to the doctor to help me decide which way to go. It's not something that comes up in everyday life, in conversations with friends and family life. It more comes up with the doctor" (Sophia).

A number of important characteristics emerged regarding the qualities of a good physician. According to one participant, "my primary care physician is very good. We can talk about my needs and take it from there" (Aaliyah). Another participant said, "my

new practice is great. The new doctor takes her time. She understands that the shoulder

dystocia was a traumatic experience. All of the new doctors have been supportive"

(Emma).

Many participants emphasized the importance of being able to ask their physician

questions. According to one participant, "my primary care physician, she's really nice. I

like her. If I have a question, hopefully, she can answer it for me. And if not, we can

figure something out together" (Ava). Another participant said:

> I was in the hospital for 10 weeks on bed rest. My doctor, he called me on
>
> holidays. On Thanksgiving. Not only is he a really brilliant physician, he is
>
> amazing as a human being. I constantly pick my doctor's brain about general
>
> questions. He is always there to answer any question I have. I have the best doctor
>
> on earth. He made everything so calm. He was amazing. (Isabella)

One participant discussed the importance of the physician investing in the doctor-patient

exchange by asking questions. She said, "I ask my primary care physician questions. I

ask her about watching what I eat, so that I don't get diabetes. She actually asks me more

questions than I ask her. Which I think is good" (Mackenzie).

Participants resisted the medical model in a variety of ways. Some of this

resistance emerged subtly, by expressing preference for one health care provider over

another. According to one participant, "my OB is really good. My PCP, the last time I

talked to him was freshmen year in college. So, technically my OB is my PCP. Little

things here and there, I will ask my OB" (Caroline). Another participant described a great

relationship with her physician that was overshadowed by the nurse practitioner, "I think

[my physician] really knows what he's talking about. He's so great. But actually, it's like,

this nurse practitioner, she's just amazing so, you just want to go in there for anything"

(Addison). Another participant preferred her midwife:

> I really like my midwife. I prefer her over my doctor. [Why?] She just listens
> more. The doctor I have doesn't listen. She comes in and chit chats about
> anything and the doctor doesn't listen to anything I say. She takes the time to
> actually hear what I have to say so it's much better. It works. (Camila)

Some participants resisted the biomedical paradigm by avoiding their doctor,

when possible. According to one participant, "my general provider plays zero role in my

personal health. I see her once a year. A once a year check-up and that is it" (Alexa).

Another participant described her highest priority health issue, mental and emotional

health, "my doctor is, not a last resort, but I have a lot of other coping strategies that I use

before I feel like I need to talk to a doctor" (Madeline).

Some participants viewed the doctor-patient relationship as a "hassle" and relied

on their physician for advice, while taking responsibility for their own health decisions.

According to one participant, "sometimes you don't want to go through the hassle of

calling the doctor, getting in the car, and going over there" (Alyssa). One participant

described her relationship with her physicians as, "good on a basic level. Nothing

personal. [What role do they play in your health?] An advisor, I guess. Your general

health is your responsibility. But they can advise you on topics, questions, anything you

have" (Amaya). Another participant described how she managed chronic back pain

without advice from a doctor, "I haven't talked to nobody about it. I just try to take care

of it by myself at home. I just get some heating pads. I'll take some pain medications to

see if it'll go away" (Hannah).

Some participants resisted the medical model by questioning diagnoses and medical recommendations. Other participants supplemented physicians' opinions with outside information or disagreed with medical advice. One participant described how she resisted her physician's explanation of irritable bowel syndrome (IBS):

> I have a gastroenterologist, but he doesn't really explain what is going on in a good way. I went in to see him and he says I have some sort of metabolic something syndrome. He says, "you have this, this, this, this." And I am like, "But what does that mean?" So, I have to look it up. (Caroline)

Another participant discussed how she questioned her doctor's suggestions. She said, "for everything the doctor recommended I take, any medications or vitamins during pregnancy, I always asked about the importance of taking it and what's in it and what it's for. I wanted to know the importance of taking it" (Amelia).

Participants described the consequences of the medical establishment ignoring their requests for tests or treatment. One participant discussed choosing a new OB/GYN practice and demanding a C-section for her newborn as a result of her last delivery. Emma had asked for an ultrasound to find out the size of the fetus, "they hadn't done an ultrasound for weeks. I was really worried about it. And during delivery, she ended up getting shoulder dystocia. The nurses were pushing on my stomach to get her out. It was really scary" (Emma). Another participant described a similar situation where she asked for an ultrasound to determine if the fetus was in a breech position:

> I told them that he's not moving a lot, he wasn't moving a lot at the end, like the other two. They did do a stress test. But I felt that they didn't do everything they could to see if he was breach. The first doctor, I think she was embarrassed that

she didn't deliver a breach baby before. She had to call another doctor to see if he

could deliver it. It was scary… There was a lot of pressure on her and she didn't

know what to do. I was hoping she would come up to the room to see me [after

the birth]. But she never did come up to the room. (Destiny)

Participants described the experience of disagreeing with their physician and the

importance of the interpersonal relationship. According to one participant:

General bedside manner is very important. Even if you come to disagreements,

the bedside manner makes all the difference. I had one doctor tell me that if I

didn't start taking my meds, I was going to die. That is exactly how she said it,

"You're going to die if you don't take this." So that's bedside manner. (Amaya)

Another participant said, "I've disagreed with my primary care physician, definitely. Like

anyone you would ask for advice, you take the advice you were given and evaluate how

much you are likely to agree with it or disagree" (Madeline).

RQ3.2: How do Biological Mothers of Newborns Perceive their own Social Systems

Regarding their Highest Priority Health Issue?

Biological mothers of newborns perceived their social system through three

lenses: opinion leaders, social networks and system norms. Specifically: (1) Some

participants identified themselves as opinion leaders in their "social circles" regarding

their highest priority health issue. (2) Participants made meaning of their social systems

by identifying the practices of their social networks, which included community, work,

friends, and family. (3) Participants described system norms, which created a taboo

around health issues, including their highest priority health issue. Evidence of these

themes is described below.

Opinion leaders as information-seekers. Participants identified themselves as opinion leaders in their social circles regarding their highest priority health issue when they served the role of finding and promoting new health ideas. Integral to the role of opinion leader was the opportunity and skill to seek health information online. According to one participant, "it would probably be me before anyone else in my circle. Because I am online all the time. I can always find the right content that I wanted, that is relevant" (Kaylee). Another participant described the importance of information seeking to the role of opinion leader. She offered an example of discussing pregnancy complications, such as preeclampsia with a cousin, "she calls me for information. I've tried to help her with certain information that is useful to her. I was able to go on the Internet to look up information, gave her a lot more knowledge, very useful" (Sophia).

One participant described her role as opinion leader when she was the first of her friends to make baby food. When asked if anyone else in her circle made baby food, she said:

> Nope, I was the first one. My friends who are pregnant now are asking me how I did it and they are looking into food mills and I tell them, "you know that blender that you used to make your margaritas in when you were in your 20s? Pull that out because that's the same thing that can make your baby food now." The equipment is all in your house already. I was the first one. (Khloe)

Social networks: It takes a village. Participants made meaning of their social systems by identifying the practices of their social networks, which included community, work, friends, and family. Community emerged as a central feature of participants' social networks. According to one participant, "health issues come up, it's just a fact of life. I

would say just being out and about" (Kaylee). Another participant described her community as encompassing the Internet, a local community organization, and a health care provider. When asked where she would go in her community for more information about her highest priority health issue, she said, "honestly, I'd probably go to the Internet, or the Y has a lot of classes and stuff, and a nutritionist. So, things like that" (Addison). Another participant described the link between family and community in the spread of information and disease. She said that she worried about her newborn contracting pertussis, "I saw a commercial about the pertussis shot. And my grandmother told me about the outbreak in Barrington. So, me and my husband will be getting the shot. We want to do our part to keep the baby healthy" (Emma).

Many participants described the workplace as an important venue to discuss their highest priority health issue. Work emerged as a distinctive place within participants' social network. Participants described a unique relationship with co-workers compared to others in their social system. In some ways, participants were more likely to learn about new health topics through co-workers compared to friends and family. Working broadened these women's social networks. According to one participant:

> Three weeks ago, my work friends were talking about Zumba. They were saying how much they like it. They were recommending it to me. Because they said it is fun and it works. They were also talking about cardio kickboxing. I'm thinking about it. They said you feel more energetic, more active, and you lose weight. So, after we talked about Zumba, I went online to find out the closest place to my house that has it. I also found out that a lot of old people, like me, do it. It doesn't matter your age, anyone can do it. So, I think I'll try it. (Jasmine)

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Another participant said, "I talk about health issues at work a lot. A couple of my coworkers are trying to lose weight and eat better. After we talk, I'll go back and Google to learn more" (Khloe).

Participants were most likely to talk about health issues with their friends and family. According to one participant, "I talk with my doctor and my friends and family about health information. I talk with my family and friends about their personal experiences. I can relate to them" (Molly). Another participant agreed, "I go to my friends with questions, or if I know someone who has already gone through it" (Savannah).

Participants described conversations they engaged in with friends and family regarding their highest priority health issues. One participant described a discussion surrounding vaccinations:

> I think a lot of vaccinations are unnecessary, like chickenpox, why are they mandated? Some of them I don't think should be required. I've had a lot of discussions about vaccinations. People talk about a bunch of side effects, and I would like to know how many people actually get those side effects? (Alexa)

Another participant described the conversations she has related to mental and emotional health, "I definitely talk to my friends about it… I feel like our conversations are constantly revolving around the mental health of the people that we work with and our own mental health and how it relates…so, definitely, from friends" (Madeline).

Participants described being more likely to try something new related to their highest priority health issue based on the recommendation of a friend. According to one participant:

I also had a discussion with a friend of mine about certain birth control methods. We talked about what she went through with certain methods. How things would have been different if we took different measures. We talked about the IUD, the pill, which is very common, there is also one now that my friend was speaking about, where a little plastic stick is inserted into your arm, we had spoken about that too, and the Mirena. I didn't have a preference, my friend said that she didn't do well with the pill. I've done pretty good with the pill, I've never had no problems. I never had any complications. I figured that would probably be my method. But now, I'm going back to the doctor to talk about my options. (Sabrina)

Another participant said, "if somebody that I trust posts something on Facebook, I will read it. I will probably be more willing to read something a friend posts" (Ariana). Participants often described their friends as opinion leaders or innovators in their social network. According to one participant, "I have a friend who is always trying new things. She got me into yoga. She doesn't like to settle, though. So, we'll start something together and she moves on, but I stay with it" (Caroline).

As participants made meaning of their family's role in the social network, two primary issues emerged: the role of male significant others, such as husbands or boyfriends in women's health issues and generational differences. Participants described the challenges they faced communicating with their partners regarding their highest priority health issues. One participant said that her greatest challenge to adopting healthy behaviors was "how to deal with my husband" (Savannah). Another participant described the challenge of communicating her decision to eat healthier to her husband, "I have to

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explain why there is no junk food in the house" (Autumn). One participant described the difficulty of explaining women's health issues to her husband:

I guess through my pregnancy, my husband was great but husbands are husbands sometimes. I spent a lot time through my pregnancy talking to my best friend about feeling like I wasn't supported by my husband or he didn't get it, he didn't get what I was going through. So definitely most recently that would be it, kind of griping about how he'll never understand what it feels like to be pregnant. (Madeline)

Another participant described the value of social support, "I would love to get a group of new moms together and drop the baby off where they provide some child care. And get some exercise and complain about your husband. That's therapy!" (Khloe)

One participant described the role her partner played in making a decision about her health:

I was going to take a birthing class. But, my boyfriend thought that we shouldn't. He said we should experience everything naturally. Or without other people's ideas in our heads. We just had to go through it to experience it. [Did you agree with him?] No, well, I guess, I kind of agreed with him. So, we didn't take any classes. But, I kind of wish that I had, you know? (Rachel)

Some participants described the supportive role that their partners played in their health decision-making. One participant described how she makes health decisions regarding her diet and nutrition, "I bounce ideas off my husband and friends" (Melanie). Regarding depression, another participant said that she talked about her highest priority health issue with "mostly just my husband, maybe some friends" (Camila).

Generational differences impacted the role that family played in participants' social systems regarding their highest priority health issue. Generational differences impacted participants' understanding of their highest priority health issue in two ways: home remedies and old wives tales. Some participants valued home remedies as a source of knowledge handed down over generations. According to one participant, "I'm close to my boyfriend's mom. Her husband is African, so, she has home remedies that work too. She is my most trusted source of health information. She has useful information about everything, yeast infections, tender breasts, anything" (Aubrey).

Other participants valued their mothers' lived experiences without accepting their home remedies. One participant said, "sometimes I will ask my mom about health stuff, but she has a lot of old school home remedies, so sometimes there's no point. But, for coughs and colds, she's good" (Savannah). In many cases, participants adhered to their mothers' health practices, especially when making choices about feeding. According to one participant, "my mom did it for me, she made my baby food. She is the only one I can think of" (Alexa).

Participants rejected health advice that they perceived as out-dated or an "old wives' tale." According to one participant, "there is an assumption that pumping is inferior to breastfeeding. I think that people who are saying that are from a different generation. It is just, kind of, old wives' tales about women who pump exclusively" (Ariana). Another participant resisted her mother's advice, which she perceived as out-dated information. She said, "my mom, I'm always telling her, I'm not trying that! Because she heard something 20 years ago" (Caroline). Another participant agreed, preferring to take advice from a younger relative, instead of her mother: "I had a cousin

who had a baby ahead of me…recently. So, she remembers more. It is fresh for her. Also, she is more updated with the technology and she has fresh information" (Stella).

Breaking women's health taboos online. Participants described system norms, which created a taboo around health issues, including their highest priority health issue. Health emerged as a private issue for many participants. Participants discussed "keeping health issues" to themselves and described individuals in their social circles who talked freely about health issues as outside of the norm. Participants described the struggle of dealing with stigma and unsolicited health advice from those in their social network. In many cases, participants described an online network, separate from family and friends, where they did not feel judged. In this way, online networks emerged as a place to break taboos surrounding women's highest priority health issues.

Health issues emerged as a personal, private topic for participants. One participant said, "really, no one wants to hear about it. They don't want to hear about your ailments" (Caroline). Another participant described herself as an "open" person, while simultaneously keeping health issues to herself, "I believe Facebook should be as private as you want it to be. It doesn't bother me. I keep my Facebook completely open – public – anyone can see. But, health, I keep that to myself" (Rachel). According to another participant, "mostly, I don't want people to know … even my close family I try not to talk about health. I don't go to family. I don't want them to know what I have or what I think I have" (Alyssa). One participant described the individuals she knew who did post about health, "very rarely do I talk about health on Facebook. There are certain people that you know are going to post stuff on health or religion. I know one or two people that are focused on health" (Isabella).

Participants described how online communities offered an alternative to talking with family and friends about health issues. According to one participant, "I'm finding it stressful to talk with my family. I am definitely not talking with friends. I think health is a pretty personal thing" (Ariana). Another participant said:

> I thought the pregnancy forum was a little better for asking questions and to look to see what actual pregnant people thought. Even if they were complete strangers, it was nice to see what they thought…We have a lot of family locally with children. That said, the forums were more helpful for me, personally than family. (Camila)

One participant described her experience talking about health issues, even though she recognized that others did not want to discuss health. When asked if she discussed her highest priority health issue with others, work emerged as a central place to discuss health topics, "we always end up talking about health and babies. I do have friends that want to talk about health stuff. Others that don't want to talk about that. I do always want to talk about it. It is important" (Isabella).

Participants described the struggle of dealing with stigma and unsolicited health advice from those in their social network. One participant described the stigma she faced when she was unable to breastfeed:

> I can't breasteed. I can't. I'm unable to. I tried twice, it doesn't work. There's such a stigma attached to not doing it. And it's hard because you want to {starts to cry}. This hospital, this time has been so good about it. There shouldn't be such a stigma. Women need to know that if they can't, that's okay. (Kaylee)

Another participant described her struggle to explain and find resources for pumping breastmilk exclusively:

> I found lactation consultants very frustrating. I saw three different people, with different advice. And they wouldn't budge. They just wanted me to keep trying. I'm like, I have a starving baby, here…I have family who think breastfeeding is the only way to go. It is very frustrating. It is really hurtful. And online resources seem to trend that way too. (Ariana)

One participant described her observation of the breastfeeding debate on Facebook, "you can tell the people who are pro and against [formula] and some people are stuck in the middle. Sometimes there is arguing and stuff. Some people are like 'leave her alone.'" (Alyssa).

> Another participant described her experience with unsolicited advice around her highest priority health issue of depression during her pregnancy:

> I have a co-worker that would say 'if they let you take anti-depressants, I guess they'll let you take anything.' Well, no that's not how it works…Strange opinions, but they probably think mine are strange, too. The problem is they are so forceful with their opinions while you're pregnant. It is just unsolicited advice. (Camila)

Another participant discussed the challenge of unsolicited advice, "everyone has something to say about labor and everyone's different. It kind of goes in one ear and out the other sometimes" (Adriana).

Although participants described struggling with unsolicited advice, these women simultaneously described stigma and taboo around meaningful conversations surrounding

women's health issues. Many participants said that nobody wants to talk about women's

health issues in an open and honest way. As a result, this research study served as an

opportunity for women to talk about health issues important to them. Participants

questioned the system norms that led to silence around women's health issues, except

when doling out stigma and unsolicited advice. One participant described her struggle

with the silence surrounding miscarriage:

> We had a miscarriage and we were trying to understand how that happened. We
>
> had no idea how common it was…It's amazing how many people I knew came up
>
> and said 'oh, we had one too.' Why isn't anyone talking about this? It's very hard.
>
> (Gia)

Another participant described her realization that she feels silenced by her inability to

speak about health issues, "gee, I guess I really needed to talk about my health, or

something. Thank you. I think I needed this" (Nevaeh). Another participant agreed, "you

covered a lot, things I never really even thought about really. You made me think about

some things I've never thought about. This was really good. I should have thought about

this [my health]" (Ava).

RQ4: How do Biological Mothers of Newborns Make Meaning of Current Social Marketing Campaigns Targeting their Highest Priority Health Issue?

Biological mothers of newborns made meaning of current social marketing

campaigns regarding their highest priority health issue by evaluating the health behavior

and audience targeted by the campaign, along with the campaign's strategy and content.

When asked to think of a social marketing campaign targeting their highest priority

health issue, participants primarily described (1) campaigns addressing diet, nutrition and/or exercise and (2) campaigns integrating maternal and child health.

In addition to their highest priority health issues, participants also discussed campaigns around anti-smoking, a secondary health issue for some participants, and charity events. One participant said, "the number one health campaign that I see is anti-smoking" (Olivia). Anti-smoking campaigns were among the first campaigns that participants thought of when asked to describe a social marketing campaign. Although anti-smoking emerged as a ubiquitous campaign, some participants disliked the strategy and content of the ads. According to one participant, "I think that anti-tobacco ads are inappropriate, most of them, they are off-putting, they try to go way too far making their point" (Ariana).

Participants described seeing advertisements and recruitment for charity events, mainly in the form of health walks. They believed that these events raised their awareness around certain health issues, however, all of the women who took part in these events described their participation related to a family member who suffered from the illness. According to one participant, "on Facebook…I don't really connect with companies or hospitals. But I did join the Relay for Life group because I personally have family members impacted by [cancer]" (Allison). Another participant said, "I walked for diabetes and have done different walks like that. Oh, I walked for Alzheimer's. My grandfather has Alzheimer's" (Mackenzie).

Campaigns addressing diet, nutrition, and exercise. For many participants, diet, nutrition and/or exercise emerged as their highest priority health issue. According to one participant, "I feel like I see a lot of diet and what's in - not what's in food – but a lot

of natural food stores and the chemicals they put into food. I feel like I see them more now" (Gianna). When asked about social marketing campaigns targeting this health issue, they identified *Let's Move!* Michelle Obama's campaign targeting childhood obesity, Got Milk? and local Rhode Island campaigns Sister Talk and Shape Up RI.

Let's Move! targets childhood obesity in an effort to raise a healthier generation of kids. The goals of the campaign are to encourage children and families to eat healthy and get active. The campaign focuses on food and nutrition, as well as physical activity. Participants believed the campaign's target audience, children, was important to the success of the campaign. According to one participant:

> Her generation is so different from ours. Her foods will already have hormones. We will be healthier than them. Just like, I guess, our parents were healthier than us. But, it just makes it more important to focus on exercise and eating good. It's important for her to have less sugar, less fat. It is the best way to avoid being sick. And diseases, like diabetes, high cholesterol and things like that. (Morgan)

Participants supported the campaign's health behavior. According to one participant:

> Michelle Obama is doing the vegetable gardens to get healthier food into schools. So that is the campaign that stands out. Obviously, everyone looks up to Michelle Obama and respects her. The fact that she's in the school lunches for me is wonderful because that's my daughter's imminent future. When I was in high school, the soda machine was open all the time. Now, you'd be hard-pressed to find a soda machine in any school and that's great. (Khloe)

Overall, participants supported the strategy and content of the campaign. In particular, participants associated the campaign with Michelle Obama and believed that her celebrity

status was an effective strategy to gain attention and awareness. One participant described the campaign as "the whole Michelle Obama thing" (Isabella) and another said, "public figures, celebrities, the first lady, brings it more in the public eye" (Allison). One participant described disagreeing with the campaign's behavior change strategies, noting, "unfortunately, I don't think they are too effective. I think statistics are effective because they scare people" (Alexa).

Participants identified local Rhode Island campaign, Shape Up RI as a social marketing campaign targeting diet, nutrition, and exercise. Shape Up RI is a statewide exercise and weight loss challenge founded by medical student Rajiv Kumar on the belief that the solution to healthy living lies in the power of teamwork and peer support. According to one participant, "we participated in ShapeUpRI. My husband has been doing it for a while and I just started" (Gia). This health campaign encourages Rhode Islanders to pursue healthy lifestyles through increased physical activity and better nutrition. Participants enjoyed the opportunity to compete on teams and track weight loss, exercise minutes, fruits and vegetables intake, and/or pedometer steps.

Participants also identified local Rhode Island campaigns, Sister Talk, as a social marketing campaign targeting diet, nutrition, and exercise. Sister Talk is a campaign aimed at women to help them lose weight by eating better and increasing their level of physical activity. According to one participant:

> Actually, I did see a campaign for health at my church. It was called Sister Talk and it was mostly focused on dieting. So, I guess if it is about dieting, it would get me there. Everyone, all the women at my church, were really receptive to Sister Talk. (Amelia)

Participants identified Got Milk? as a health campaign targeting diet and nutrition. Got Milk? is funded by the MilkPEP (Milk Processor Education Program), which is made up of the nation's milk processors, who are committed to increasing fluid milk consumption. Although this may not fulfill the definition of a traditional social marketing campaign, it is important to understand participants' views about this advertising campaign. One participant said, "the only campaign I can think of is the Got Milk? campaign. Obviously it stuck with me. It was good, the overall appeal, health for everyone" (Kaylee). Although many participants favored the Got Milk? campaign, they were also skeptical of the campaign's motives. According to one participant:

> I always take it with a grain of salt because I feel like anything that is pushing a particular trend or particular topic is probably biased in some way or another and if you're going to buy into it, you really need to spend time evaluating the whole idea and finding out how much truth there is to that particular campaign because more than likely it's not as straightforward as it seems. (Madeline)

Campaigns integrating maternal and child health. Participants described the integration of maternal and child health, particularly in the area of feeding, as one of their highest priority health issues for their newborn. In this area, participants described seeing social marketing campaigns targeting breastfeeding, pregnancy, and developing an attachment to the newborn through the First Hug campaign.

According to one participant, "campaigns are effective when they use people who they are regarding, having an interest, related to them" (Savannah). This explanation describes participants' attention and interest in the March of Dimes campaigns surrounding pregnancy, prematurity and birth defects. According to one participant, "I

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saw a lot [of campaigns] by the March of Dimes. Other than that…I'm sure there were some wonderful ones I probably read, but I was consumed with the pregnancy, so I only read things pertaining to that" (Natalia). Participants described extensive promotion of breastfeeding. One participant said, "I remember seeing all breastfeeding campaigns. They said it is healthy for the baby and for me too. They are very informative and there is a lot of promoting of it, just tells you more about it" (Faith).

The campaign discussed by most participants was the First Hug or Skin-to-Skin campaign. This campaign focuses on developing an attachment to the newborn. One participant said, "skin-to-skin, I had my baby like that. The nurse said it was so the baby can hear you and be loved by you. That one makes you think" (Nevaeh). One participant described how she found out about the campaign from the nurse in the delivery room: "it was really comforting, it is good they have that information available to you. It was a very wonderful experience, and for me to be able to regulate his body temperature on me" (Sophia). Many participants noted that they had not had the opportunity to have a first hug with previous children. One participant said, "we had our first hug for two hours. It worked. There was a connection. He could smell me and know I was his mom. It felt good. I didn't know about it with my first daughter. It was useful" (Aubrey).

Participants heard about the first hug from a variety of sources, including WIC counselors, nurses, family, and friends. One participant said, "skin-to-skin is everywhere. I did it. It was good. It was a lot more bonding, it seemed to work much better compared to my other births" (Faith). Another participant said, "I did skin-to-skin this morning. I like this. It makes my baby more comfortable. My family, my sister told me about it too, before I got to the hospital" (Zoey). Participants who were unable to breastfeed

appreciated the opportunity to bond with their newborn. According to one participant, "for me, its very interesting that I can still do the same thing and get that bonding. That's something I liked and I started doing it as soon as the nurse said I could" (Amaya).

Participants described the role of medical authority in determining whether or not mothers would be able to have a first hug with their newborn. Some participants heard about this campaign from their nurse. One participant said, "nurses are the front line defense to get information out there" (Ariana). Another participant expressed concern about the role of nurses in this campaign:

I heard about skin-to-skin in the recovery room. My WIC counselor actually told me about it too. She said the first hour is the most important. I didn't realize that. But I have a friend who came to have a baby. And the lady, the nurse just lifted her gown and plopped the baby down. So, I think its good, but it has to be your choice. (Emma)

Some participants were prohibited from having immediate skin-to-skin contact with their newborn. According to one participant, "I was a little upset that I couldn't do the first hug. I understand that it is what they needed to do - bring him over to the NICU. I would have liked to have that initial skin-to-skin contact" (Isabella).

RQ5: How can Biological Mothers of Newborns be Classified into Adopter Categories regarding their Highest Priority Health Issue?

I grouped participants based on their innovativeness, indicating the degree to which each individual had adopted various new ideas regarding their highest priority health issue (such as new health behaviors). Participants were grouped according to their communication channel behavior, resources, social status, and contact with change agents

regarding their highest priority health issue. Communication channel behavior, contact with change agents, and cosmopoliteness, or the degree to which an individual is oriented outside a social system, is based on participants' communication behaviors. Resources and social status is based on participants' socioeconomic characteristics and personality values.

Figure 1. Participants Classified into Adopter Categories based on Innovativeness
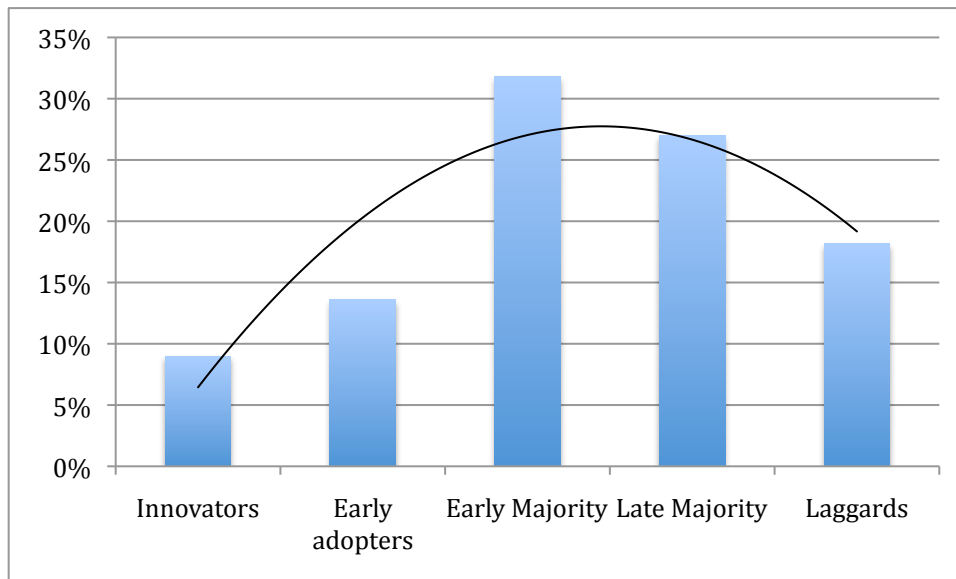
Figure 1. Figure 1 shows how biological mothers of newborns can be classified into adopter categories regarding their highest priority health issue.

- Innovators: Four biological mothers of newborns displayed the highest level of innovativeness and were grouped as innovators.

- Early adopters: Six biological mothers of newborns were early adopters.

- Early majority: Fourteen biological mothers of newborns could be described as early majority.

- Late majority: Twelve biological mothers of newborns were the late majority.

- Laggards: Eight biological mothers of newborns with the lowest innovativeness, were grouped as laggards.

Innovativeness is a continuous characteristic of individuals. As a result, these categories serve only as a conceptual device to better understand individuals in relation to one another. In this study, the most innovative participants were characterized by a formal education of college or more. They lived in Rhode Island cities and towns with the highest per capita income. These individuals perceived themselves to be technologically savvy. They displayed high exposure to new media and mass media channels. As a result, they tended to trust themselves and their own research, while resisting medical authority. The most innovative participants were more likely to favor external social support, as they viewed themselves as cosmopolites, outside of the social system. Whereas, early adopters in this study were more likely to be localites, already possessing a rich social circle. Early adopters described themselves as opinion leaders and were likely to be the "go to" person for questions regarding their highest priority health issue. These participants described themselves as information seekers.

RQ5.1: How are Biological Mothers of Newborns' Socioeconomic Characteristics Related to their Innovativeness Regarding their Highest Priority Health Issue?

Socioeconomic characteristics related to participants' innovativeness regarding their highest priority health issue included (1) formal education and (2) technological literacy. Participants' age did not impact their innovativeness related to their highest priority health issue.

Formal education. Educational attainment, which varied considerably among participants (see Figure 2), correlated with innovativeness in this group.

Figure 2. Participants' Educational Attainment
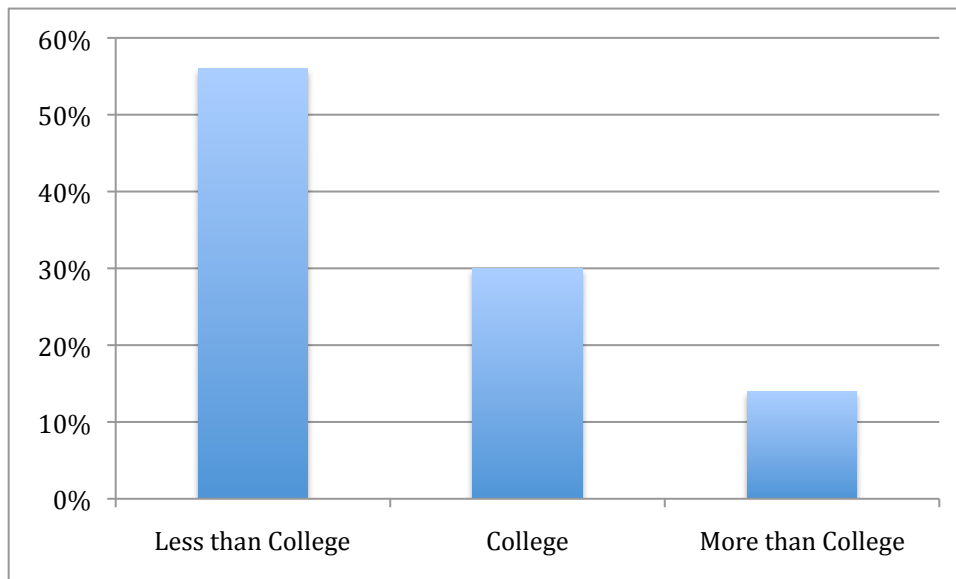
Figure 2. Figure 2 displays the educational attainment among participants. Six participants (14%) attained more than a four-year college degree, 13 (30%) earned a four-year degree, 25 participants (56%) had less than a college education, which includes an associate's degree, 'some college,' a high school diploma, or less than a high school diploma.

I'm not tech savvy. Early adopters perceived themselves as opinion leaders based on their information seeking capability. Kaylee described herself as an opinion leader in her social circle "because I am online all the time. I can always find the right content that I wanted, that is relevant" (Kaylee). On the other hand, many participants described themselves as lacking the knowledge and skills necessary to fully engage with new media. One participant said, "I don't ever use the computer. Even my sister and 13-year old brother. The kids know so much more than I do about that stuff" (Giuliana). Participants described a baseline of being able to search on the Internet for answers to questions regarding their highest priority health issue. According to one participant, "I'm

not a computer person really, only if I need to look anything up" (Abigail). When asked

about the use of blogs, community forums, Twitter, and mobile apps, one participant said

she had never used these new media platforms because "I'm old-style" (Jasmine).

Participants' perception of being technologically savvy revolved around their use

of new media platforms. Participants suggested that it wasn't enough to be able to search

for information online. In order to truly engage with the technological world, participants

expected themselves to be new media literate. One participant described her use of the

Baby Tracker app, which she downloaded after reading about it in the book, *What to

Expect When You're Expecting*:

> This is one of the only apps I have on my phone at all. It is easy to use. I'm not
>
> very technologically savvy, I guess you'd say. Something that's simple. Has
>
> information for me to read at my leisure or a tracking tool I can use. I was looking
>
> for something to track feeding times for the baby just because my days are
>
> running together. (Natalia)

Another participant agreed, "no, I don't have any apps on my phone. I'm not tech savvy"

(Mackenzie).

**RQ5.2: How are Biological Mothers of Newborns' Personality Values related to
their Innovativeness Regarding their Highest Priority Health Issue?**

Personality values related to participants' innovativeness regarding their highest

priority health issue included rationality and intelligence. Participants did not display

fatalism in their attitude toward their highest priority health issue. The strongest evidence

of rationality, intelligence, and attitude toward affecting change was displayed in

participants' empowered, critical stance toward understanding their body and taking

charge of their health. This overall theme of integration of body and self is described below.

Integration of body and self. Overall, participants took an active role in their health regarding their highest priority issue. Participants displayed rationality and intelligence as they described a critical thinking process, which involved soliciting advice from multiple sources, analyzing the information and making the best personal decision. This process relied on trusting the self and the body. According to one participant:

> I listen to my body. I'm the only one who knows what I need or not. I follow my
>
> body's needs. I believe in my capacity and my own thinking to decide what is best
>
> for my body. I appreciate the doctor's advice. But I trust myself. I think the most
>
> important thing is following what your body needs. Every human, every body has
>
> different needs. You have to trust yourself. (Stella)

Another participant described questioning and resisting her physician's advice through an iterative information gathering process involving family and the Internet. When her OB/GYN prescribed an antibiotic during pregnancy, Abigail searched for information and weighed input from a variety of sources before deciding not to take her doctor's advice. She said, "even though you are a doctor, you're just a human that can make a mistake. Yeah, you're smarter than me. But still, you can make a mistake. It's my life. I have to deal with the consequences" (Abigail).

Participants described the conflict that can occur when the doctor's advice differs from the patient's knowledge. According to one participant:

> I'm in school to be a nurse. Sometimes I'll ask to see what they say [the doctor's
>
> office] and its totally different from what we're learning. So I take their

information and mine and the Internet and come up with an answer that makes me feel comfortable. [What is that like?] You feel nervous. You have to say 'I didn't do that because I didn't feel comfortable.' It's awkward but they are not going to make you do something. (Alyssa)

Another participant described arming herself with the knowledge necessary to face a potential challenge at the doctor's office. Gia discussed how a friend was misled by a lactation specialist, who made her panic and supplement with formula. According to Gia, "they sent her off on a crazy 'I can't do this' train. You have to learn for yourself because they don't always know and they stress you out" (Gia).

Participants described trusting their newborn's instincts. One participant said, "not one source says exactly what the other source says. You have to…I go by what the baby tells me now. I really try to listen to him and his cues and what he needs" (Isla). Another participant said:

We did the skin-to-skin thing and she just kind of latched on and it was all over with. I thought breastfeeding was weird. I didn't want to do it at first, but then, she kind of wants to, so I guess I have to. Like I have a choice in the matter! She decided, she knows better. (Adriana)

Some participants discussed their family as their most trusted source of health information. One participant said, "I trust my husband and myself. I mean, if I don't put in my effort, I have to keep it up. I am the one who needs to do it" (Jasmine). Another participant said, "my most trusted source of health information is my husband. Well, I would say between my husband and the Internet, as my most trusted sources" (Alexa). Participants described evaluating information from family and Internet sources.

According to one participant, "my most trusted source of health information comes from my family and going online. I ask my family and then I go and look stuff up online. And, then I make up my own mind" (Sarah).

A number of participants described their mother as their most trusted source of information regarding their highest priority health issue. When asked, "who would you say is your most trusted source of information for this particular health issue?" participants responded, "probably my mom" (Adriana) and "my mom is my most trusted source of health information" (Mackenzie). Another participant favored the advice of her mother above her physician. She said, "I mean the doctor knows a lot, but if I had a question about the baby, I'd ask my mom because she had four kids so I figured she'd been through it multiple times" (Gianna).

Participants also described the complex ways that they evaluated sources of health information. One participant discussed the challenge of identifying her most trusted source of health information:

> I would say a medical professional is the most trusted source in the fact that they probably have the most knowledge but then I would say my closest friend Jessie is the person I feel most comfortable with and knows me best and could give me information that more personally relates to me. (Madeline)

Another participant balanced her doctor's advice with trusting herself, "my doctor is my most trusted source of information about IBS. They got the degree. But, at the same time, you know yourself better than anyone" (Caroline).

Participants described the importance of medical advice regarding their children. One participant said, "if it is something general, I will just Google it. But if it is

something specific to my daughter, I will just call the [doctor's] office" (Khloe). Another participant agreed:

When I think about it, for myself, I just follow through the best I can for myself. Then, if it's my kids and my kids' pediatrician, I think I'm a little bit pushier with trying to make sure I get my point across and make sure that they know what I'm asking so I get the answer that I need. (Madeline)

Another participant agreed, "well, if it was for my daughter, I would call right away, you know if I had a question. But, if it is for my health, I wait it out" (Aubrey).

Some participants suggested that they would most trust their doctor. One participant said, "my most trusted source of health information, I would say, is my physician. I would talk to him about my health issues" (Destiny). Another participant agreed, "if I have a question, I ask my doctor. I don't like to listen to people's opinions to be honest with you, so I don't ask. Half the time they are wrong" (Ava).

Participants described the importance of the doctor's credentials in their reliability. One participant said, "my personal opinion, it is a BIG mistake for those that don't want to vaccinate their children. All kids should be vaccinated. Listen to your pediatrician. They have a degree on their wall for a reason" (Khloe). Other participants described contrasting views on combining Internet research with a doctor's advice. One participant said:

I'd more rather hear from a doctor's point of view, rather than look up something on Google. I'd just rather have feedback from a doctor rather than how certain people experienced this or that. If I had a certain concern I would wait to talk to the doctor. Best feedback you could possibly get. (Sophia)

Another participant described trusting and appreciating the information that Women &

Infants Hospital shared about pregnancy and postpartum care online, however, she said,

"there is something very reassuring about hearing any information that [my doctor] has,

especially something that he has to talk about with me specifically" (Natalia).

RQ5.3: How are Biological Mothers of Newborns' Communication Behaviors

Related to their Innovativeness Regarding their Highest Priority Health Issue?

Communication behaviors related to participants' innovativeness regarding their

highest priority health issue included (1) research order and (2) evaluating messages in

the round. Innovative participants were more likely to engage in greater social

participation through interconnected, cosmopolite networks, contact with change agents,

and higher exposure to new media and mass media.

Ordering research. Participants described a set of common communication

behaviors related to seeking information about their highest priority health issue. These

women described finding out about health issues through mass media, new media, and

interpersonal communication with friends, family, and physicians. More innovative

participants valued their own analysis of media. One participant said, "I'm a planner and

a thinker and what can I do to get myself where I want to be so I just think through things

and bounce things off my husband and friends – that kind of thing" (Madeline). Another

participant described her research process before seeking advice from a doctor, "I always

research to see if information is biased or what not. I am an engineer, so I have to

research it myself first to be sure I am asking an intelligent question" (Gia).

Participants described "cross-checking" information among a variety of sources.

One participant said, "I would probably ask my doctor first, and then if not, I would

probably research it more on the Internet" (Adriana). Another participant described how she searches for health information, "I'll Google it. Plus that, I'll ask my friends and family. My brother is a pharmacist. My husband is a physician. Whatever the question is, there will be someone in the field. I trust their knowledge" (Morgan).

Participants described trusting the personal experience of friends and family. One participant said, "I typically ask my mom first, then I'll ask my doctor. So, it's like, I'll ask her a lot of questions. I'll ask my mom's opinion about what I should do and see what she says" (Gianna). Another participant talked with friends and family about health information, "I talk with my family and friends about their personal experiences. I can relate to them. I would also listen to an expert or a doctor, who I felt is close to me" (Molly).

Messages in the round. More innovative participants described analyzing media messages "in the round." Innovative participants were more likely to understand and identify with messages that offered multiple perspectives on an issue. According to one participant, "I am always checking the Internet and Google. I find a bunch of websites that might answer my question and I just kind of look at the messages in the round. I evaluate them in the round" (Mackenzie).

Participants explained the importance of understanding more than one perspective on an issue. According to one participant:

> We need to help everyone see both sides. People who did not have a good diet, did not exercise. And show the consequences of that action: diseases, diabetes. They can't do the things they want to do in life. The other side is a good diet, more exercise. Those people live a longer, healthier life. (Morgan)

Participants described tuning out messages that pushed them in one direction as opposed to providing solid information to make an informed decision. Madeline said, "the way to get through to me is to present more than one side. If I have TV on and something seems really one sided, I just tune it out because I feel like it's not the whole truth" (Madeline).

Chapter 5: Discussion

This study explored how biological mothers of newborns made meaning of health and current social marketing campaigns targeting their health. The literature review suggested the potential to apply diffusion of innovations theory to a social marketing framework in order to better understand women's health and the health of their families. This study answers the call by Green, et al. (2009) for more participatory approaches to diffusion of innovations theory research. In order to do so, I interviewed 44 women who lived in the state of Rhode Island and delivered a newborn at Women & Infants Hospital. These findings suggest that these mothers of newborns embody and challenge the mother-child dyad in various ways, resist the biomedical paradigm, and envision new ways to interact in their social networks. This chapter offers a discussion of the research findings and the theoretical and practical implications of this study. Future research directions and strengths and limitations of the research will also be discussed.

Embodying the Mother-Child Dyad

Participants made meaning of their health by reformulating the mother-child dyad, a process in which these women acknowledged the importance of their own health in caring for their child. In this way, participants were able to "let go of being Superwoman" by recognizing the importance of "me" time in sustaining their physical and emotional health. A variety of physical and psychological health issues emerged in discussions with biological mothers of newborns, including reproductive health, chronic conditions, preventive care, and depression. The implication of this finding is that the biological mothers of newborns embraced the duality of the mother-child dyad, which is

essential for women's health because the health of mother and child are intrinsically linked (Brehaut et al., 2009).

　　Self and body image. Women described their highest priority health issue as diet/nutrition and/or exercise. Participants suggested that weight loss is a "constant conversation" among women and described a link between losing weight and body image. The body emerged as a site where women's identity formed in relation to gender and reproduction. These women acknowledged the problematic emphasis on weight loss and body image placed on them by society. At the same time, most of these participants continued to see diet/nutrition and/or exercise as their highest priority health issue, even when health was not their primary motivating factor for losing weight. In this way, participants may have experienced a false consciousness, which occurs when individuals' common sense understandings reinforce oppressive dominant ideologies (Lather, 1991). Gramsci's theories of hegemony, which he developed in the 1920's and 1930's, suggest that individuals hold beliefs that do not serve their best interest (Gramsci, 1971). False consciousness reinforces the importance of hegemony in understanding and analyzing the diet/nutrition and/or exercise as participants highest priority health issue.

　　Medicalization of women's bodies emerged as an important concept in the analysis of participants' understandings of diet/nutrition and/or exercise as their highest priority health issue. Participants described a contest over their bodies in relation to diet and exercise before, during, and after pregnancy. This finding reinforced Kline's (2006) argument that women's bodies have been medicalized so that natural processes, such as pregnancy, are understood as illnesses. These women rebelled against the assumption of pathology intrinsic to their bodies, which relegated these natural processes to medical

authority (Foucault, 1978). Participants described the role of body image and weight loss in relation to "getting my body back" and "becoming myself again." In this way, participants lived the duality of women's reproductive health and challenged the connection between self and body. Women in this study described their struggle to reclaim their bodies and empower themselves culturally through the singular action of personifying themselves and their bodies as one (e.g., Sartre; Merleau-Ponty).

The biomedical paradigm and medical authority conflicted with women's instincts to listen to their body. This finding builds on research conducted by Warren and Brewis (2004), which described pregnancy as a body episode, in which women are able to live outside cultural expectations for the female body. Participants in this study suggested that while pregnancy may offer a reprieve from cultural stereotypes of womanhood and beauty, these expectations may be replaced by equally oppressive and unjustified medical dictums.

Integration of maternal and child health. Women described a number of high priority health issues for their newborns, including caretaking, avoiding risk, and feeding. These mothers of newborns discussed five separate categories of feeding, including breastfeeding, breastfeeding and pumping, pumping-only, supplementing with formula, and formula-only. Interpretations of feeding were determined by age, working outside the home, and ability or desire to breastfeed. Participants identified feeding as an integration of maternal and child health. Mothers of newborns believed that their own diet and nutrition impacted the health of their infants either directly through the quality of breastmilk or indirectly as an example of healthy eating habits. Participants believed that healthy eating habits start with feeding and emphasized the importance of "being a good

role model." Some participants stressed the dual health benefits of breastfeeding for mother and child. This finding contributes to recent research illustrating the link between parents maintaining a healthy diet and exercise and successful modeling of healthful behavior for children (Berge, Larson, Bauer, & Neumark-Sztainer, 2011).

Benefits and barriers. These biological mothers of newborns described what motivates them to adopt healthy behaviors and what barriers keep them from adopting healthy behaviors related to their highest priority health issue. These women noted limited resources, including a lack of insurance coverage, financial resources, and help at home as barriers to adopting healthy behaviors. Participants discussed the challenge of balancing full-time work with family life. A lack of time, due to working outside the home, emerged as a major impediment to meeting goals related to their highest priority health issue.

Women were motivated to adopt new health behaviors through a series of partnerships. For many women, pregnancy inspired them to move outside of their comfort zone to join online groups or seek new channels of information. In this way, pregnancy served as an entry point to online communities and new media platforms. After pregnancy, women sought parenting or new mom groups through similar channels. As a result, pregnancy does not appear to be a one-time opportunity to reach women, but a gateway, which leads to new social networks and improved use of new media. Mothers of newborns also benefited from a variety of private and public partnerships, including social work, nursing home visits, WIC, Shape Up RI, and the Women & Infants Hospital Warm Line. These findings support the importance of including individual, community,

and structural approaches in a modern synthesis of social change related to adopting new health behaviors (Smith, 2004).

Intersection of Maternal-Child Health

Research question two explored how biological mothers of newborns identify their health information needs related to their highest priority health issue. For these participants, information needs about their highest priority health issue emerged in relation to the intersection of maternal and child health. Specifically, information needs included pediatrician support, tailored information, and mindful attention to health issues. Participants asked their child's pediatrician questions ranging from infectious diseases (e.g., cold and flu), vaccinations, breastfeeding support, depression (or "baby blues"), to family history and genetic predisposition.

This study interrogated the role of listening in the patient-provider relationship. Scholars have focused on the importance of providers' listening behaviors, while the role of patients as listeners is often overlooked (e.g., Davis et al., 2008; Davis et al., 2008; Holmes, 2007). Burdensome health insurance regulations, time restrictions, and falling salaries may be perceived by health practitioners as obstacles to optimal listening behaviors. In the current study, participants sought physicians with excellent communication skills, who spent time with them, listened to their concerns, and treated them as more than "just a number." Participants who lacked a strong patient-provider relationship were more likely to question their physician's diagnosis and medical recommendations. These women also sought ways to interact with their physician through new communication technologies, such as email, office websites, or the online Health Tracker.

Overall, participants were open to asking maternal health questions to their child's pediatrician. Participants were most likely to ask questions at the intersection of maternal-child health, such as breastfeeding or infectious disease. In particular, participants mentioned the importance of pediatricians asking about the mother's health during pediatric appointments. These findings suggest maternal buy-in for pediatricians to move toward family-centered services to address the health needs of mothers and babies (e.g., Brehaut et al., 2009; Bair-Merritt et al., 2008).

New Media: New Channel, New Rules

Research question three explored women's perceptions and use of new media, mass media and interpersonal communication channels. Participants made meaning of communication channels regarding their highest priority health issue by personalizing their use of communication channels and by questioning the "expert" through evaluation of the source and content of health information. Participants described the intersection of new media, mass media, and interpersonal communication. Participants personalized their use of traditional mass media by selecting specific channels related to their culture, religion, or point-of-view. At times, participants used new media similarly to mass media and at other times new media offered an extension of interpersonal communication. New media allowed participants to personalize their use of communication channels, resulting in more tailored information-seeking. This finding corroborates Dearing and Kreuter's (2010) hypothesis that social media serves as "pull media," allowing consumers to pull content that is relevant to them. New media also provided an opportunity for participants to build interpersonal communication networks.

The Google effect. Participants described the Internet as their primary communication channel to seek information about their highest priority health issue. For most participants, Google was second nature when seeking answers to health questions. More innovative participants tended to trust themselves and their own research, while resisting medical authority. These participants described analyzing media messages "in the round." These women often conducted research prior to a doctor's visit in order to "ask the right questions."

Early adopters identified themselves as opinion leaders in their social circles regarding their highest priority health issue when they served the role of finding and promoting new health ideas. Integral to the role of opinion leader was the opportunity and skill to seek health information online. Participants described a baseline of being able to "Google it up" for answers to questions regarding their highest priority health issue. On the other hand, many participants described themselves as lacking the knowledge and skills necessary to fully engage with new media. Participants suggested that it wasn't enough to be able to search for information online. In order to truly engage with the technological world, participants expected themselves to be new media literate.

This research builds on extant literature calling for the investigation of the Internet as an integral component of the overall health communication system, which influences individuals' health care, beliefs and behaviors (Cline & Haynes, 2001). The Google effect impacted participants' health knowledge, health efficacy, and doctor-patient relationship. This finding offers a nuanced account of how participants search for information on Google, providing important insight for future campaigns.

Addressing the innovativeness/needs paradox. For many participants,

pregnancy offered an opportunity to embrace new media for the first time. Participants

used a variety of new media platforms related to their highest priority health issue,

including Facebook, mobile applications, texting, email, Google, and community forums.

Facebook emerged as the most widely used new media platform among participants.

Participants connected with old friends, new friends, best friends, significant others and

family on Facebook. Some participants described the importance of connecting with

acquaintances or old friends to seek advice regarding health issues. Participants described

experiences of stigma and silence related to health and suggested that new media offered

opportunities to overcome these challenges. In particular, participants described

interpersonal communication online as "less judgmental" than conversations with their

friends and family in "real life." In this way, social media respects resistance and offers a

forum where women can influence and be influenced by feminist perspectives. This

common experience among participants suggests that Facebook favors the strength of

weak ties in relation to participants' highest priority health issue. This finding extends

diffusion of innovations theory by suggesting new opportunities to develop the strength

of weak ties (Granovetter, 1973) through the intersection of new media and interpersonal

communication.

Texting emerged as a ubiquitous form of communication among participants.

Participants preferred texting as an overall form of communication for a variety of

reasons, including flexibility, ease of access and ease to save for future reference.

Participants believed that text messaging allowed them to get health messages "on the

go." This channel of communication matched most closely with their busy lifestyle. This

finding suggests that texting offers almost universal access to participants. In this way, texting addresses the innovativeness/needs paradox by reaching underserved populations and those with the greatest resistance to innovations.

Moving beyond the expert. Women resisted the biomedical paradigm in various ways, such as through trusting their bodies and valuing storytelling and personal narrative as a form of expertise. Participants described interpersonal communication with their physician as a central communication channel related to their highest priority health issue. However, participants resisted the medical model in a variety of ways. Some participants resisted the medical model by questioning diagnoses and medical recommendations, supplementing physicians' opinions with outside information or disagreeing with medical advice. This finding contributes to research on medicalization (e.g. Kline, 2006; Martin, 2001; Pollock, 1999) by further explicating how women make meaning of the biomedical paradigm and the ways that they question and resist medical authority.

The accessibility of varied communication channels, ranging from organizational websites to community discussion boards prompted participants to rethink their definition of an expert. Participants valued storytelling and personal narrative as a form of expertise. These results add a new dimension to Barker's (2004) finding that diffusion of innovations is most effective when sources of information are regarded as trusted and highly credible. For these women, layperson expertise from other mothers was often viewed as trustworthy and credible.

Participants understood campaign planners as "experts" who may not understand the implications of health campaigns. In particular, these women described the role of

breastfeeding promotion and the impact of "breast is best" campaigns. Feeding emerged as a controversial issue, illuminating a variety of cultural taboos, which ranged from societal pressure to breastfeed, viewing breastfeeding as "normal," or understanding formula feeding as the norm. Participants based their newborn feeding decisions on knowledge about the benefits of breastfeeding, ability to breastfeed, social system expectations about feeding, and personal preference. Increased maternal age also played an important role in a number of participants' decisions to breastfeed. These findings support research indicating that peer oriented norms and expectations inform perceptions of the body, and that these norms generally correspond with mainstream descriptive norms (Bute & Jensen, 2010).

The impact of breastfeeding campaigns on these women suggests that we, as campaign planners, need to listen to target audiences to create initiatives that are more responsive to the audience's needs. The danger of these types of campaigns is that they reduce women to a biological, reproductive function and that this outside/inside, yes/no division blinds campaign planners to the fact that this campaign, which is aimed at women, does not consider the varied perspectives and unintended consequences related to women's health (Bachelard, 1994). This finding reinforces the importance of starting with the audience in order to understand their issues and problems. In this way, social marketers can avoid basing an intervention on expert knowledge (Melkote, et. al 2008). This finding builds on French and Blair-Stevens' (2010) suggestion that listening is at the core of social marketing when they argued that interventions should be shaped by what users say will help them, as opposed to expert opinion. Finally, this praxis-oriented research offers an illustration of how to move beyond current understandings of the target

audience by allowing opportunities for these individuals to be understood as people, participants, and collaborators in social marketing initiatives (Lefebvre, 2007).

Race, class, and gender: An empty vessels fallacy. Biological mothers of newborns perceived their social system through three lenses: opinion leaders, social networks and system norms. Some participants identified themselves as opinion leaders in their "social circles" regarding their highest priority health issue. Opinion leaders emerged as localite information-seekers with strong ties to their social network. Participants made meaning of their social systems by identifying the practices of their social networks, which included community, work, friends, and family. Within families, participants described generational differences, such as "old wives' tales" and home remedies.

Participants discussed system norms, which created a taboo around health issues, including their highest priority health issue. Health emerged as a private topic, where some participants sought the anonymity of online interpersonal communication to escape the judgment they felt in their daily conversations with friends and family. Participants described facing stigma around health issues, such as breastfeeding. Reflecting Bute's (2009) research on conversations about infertility, participants described being silenced by taboos around women's health topics, such as miscarriage. These findings reinforce Bertrand's (2003) prediction that diffusion of innovations theory will play an increasingly important role in behavior change campaigns as the field of public health evolves away from a focus on individual behavior and embraces the importance of social norms.

Participants' understanding of health and their bodies reflected the complicated ways in which sex, race, and class oppression intersect (bell hooks, 1984). The body

emerged as the site of racist and sexist ideologies (Minh-ha, 1989). In particular, differences surrounding race, class, and gender emerged in relation to women's understanding of food, diet/nutrition and/or exercise. Cultural expectations played an important role in the food these women ate and how they related to food. Culture and religion also dictated participants' personalization and use of communication channels. In this way, race, class, and gender impacted participants' understandings of complex health issues. For example, these women struggled to define and make decisions about cord blood banking. Today, families are offered the opportunity to donate or pay to save cord blood stem cells from newborn's umbilical cord in order to treat a range of life-threatening diseases and disorders in the future. This finding builds on understandings of how genetic normality impacts social norms and the physical and biological constructs of gender and the body (Ettorre, 2000). Futhermore, the role of race, class, and gender in participants' struggle to understand and make decisions about cord blood banking highlights the importance of campaign planners taking a culturally-centered approach (Dutta, 2007).

These results also suggest that race, class and gender may be missing components of the diffusion of innovations theory. Rogers (2003) describes the importance of avoiding the empty vessels fallacy, which assumes that potential adopters are blank slates (p. 254). In this way, change agents may be able to determine the form and function of an innovation in a social system, but not the meaning of the new idea, which may be reinterpreted based on past experiences. Although the empty vessels fallacy applies to all potential adopters, Rogers (2003) emphasizes the importance of understanding indigenous knowledge systems. There is no specific discussion of the many ways that

race, class and gender, even within our own social system, might impact past experience and interpretation of an innovation. It is particularly interesting that Aristotle described women as an empty vessel (Blundell, 1995). In this way, participants' experiences of stigma and silence suggests that gender, as well as race and class, should be an integral component of the empty vessels fallacy in the diffusion of innovations theory.

Understanding Social Marketing Campaigns

Research question four explored how biological mothers of newborns made meaning of current social marketing campaigns regarding their highest priority health issue. Participants evaluated the health behavior and audience targeted by the campaign, along with the campaign's strategy and content. When asked to think of a social marketing campaign targeting their highest priority health issue, participants primarily described (1) campaigns addressing diet, nutrition and/or exercise and (2) campaigns integrating maternal and child health. Participants suggested that campaigns were most successful when they closely aligned with their interests. These women sought opportunities to "personalize" campaigns by signing up for specific information or events. Participants also described the importance of well known organizational or celebrity "names" supporting or endorsing the campaign. Innovative participants were more likely to understand and identify with messages that offered multiple perspectives on an issue. These findings suggest the importance of understanding the target audience and, to the extent possible, providing tailored, personalized campaign messages.

Integration of Body and Self: Innovativeness Categories

Research question five determined ways that biological mothers of newborns can be classified into adopter categories regarding their highest priority health issue.

Women's innovativeness, or the degree to which an individual is relatively earlier in adopting new ideas compared to other members in a social system, was explored in relation to personality values, communication behaviors, system norms, and social networks. The most innovative participants were characterized by cosmopoliteness, communication channel behavior, resources, social status, and contact with change agents regarding their highest priority health issue.

Participants took an active role in their health regarding their highest priority issue. These women did not display fatalism in their attitude toward their highest priority health issue. Instead, participants described a rational, intelligent approach to affecting change through an empowered, critical stance toward understanding their body and taking charge of their health. More innovative participants resisted the biomedical paradigm and re-claimed the body by trusting and "knowing your body best." This integration of the body and the self reflects Moseley's (2004) diffusion of innovations framework, which suggests a more interactive model of communication "in which participants create and share information to arrive at mutual understandings of new values, new concepts, and new practices" (p. 149).

Limitations and Future Research

Qualitative methods provided an opportunity to gain in-depth understandings of participants' opinions and insights related to their own health and of health campaigns targeting them. Despite these advantages, interviewing may be perceived as an "indirect" method of gathering information because it relies on the perceptions of the individual and is collected in an artificial setting (Creswell, 2007).

The setting is an important factor in this study because in-person interviews took place in the postnatal ward. Conducting interviews in the Women & Infants Hospital postnatal ward provided access to 304 biological mothers of newborns in three weeks. Furthermore, this sampling technique suggests transferability to the state of Rhode Island because over 73% of all births take place at Women & Infants Hospital, providing access to a large proportion of the population. This setting, however, may be perceived as a limitation in this study because 55% of the mothers of newborns approached at Women and Infants were unwilling to participate in an interview during their recovery. Furthermore, nursing staff, family, or other hospital personnel at times interrupted interviews in the postnatal ward. In order to limit these biases, mothers of newborns were provided the option to participate in the study outside the postnatal ward by scheduling a telephone interview at a later date and 17 of the 44 interviewed chose to complete the interview by phone. A limitation of telephone interviewing is the high attrition rate of participants who consent to participate but are unreachable for an interview. I was unable to reach 13 potential participants who had consented to a telephone interview, even after calling them five times over the course of two weeks (as dictated in the IRB protocol).

Another limitation of this setting is sampling from one hospital. Although the majority of women in Rhode Island deliver at Women & Infants Hospital, there are six other hospitals where women may choose to deliver, in addition to out-of-state options and home births. Although Women & Infants Hospital provides the greatest access to the largest population given the time and resource restraints of this study, there are limitations to sampling from one hospital setting. Women & Infants Hospital is an urban, teaching hospital, which offers state-of-the-art treatment and care. This hospital setting is

frequently busy with students and researchers, which is different from other hospitals in the state. Women & Infants' philosophy of care is to provide patients with the best professional and personalized medical care in a relaxed and caring atmosphere. Women & Infants provides amenities that smaller hospitals do not offer, such as "Deluxe Delivery" transportation services, a resident photographer for newborn portraits, Stork Club gourmet hospital dinners, and Warm Line telephone support for questions after discharge. As a result, the women who choose Women & Infants Hospital may be different in important ways from the women who choose other delivery options. This may limit the transferability of findings to women in Rhode Island who delivered at Women & Infants Hospital.

Another potential bias in this study is the exclusion criteria, which excludes women under 18 and women facing serious illness of the newborn such that it would be upsetting to contact the mother. Although these special groups would likely offer a different, unique perspective for this study, these exclusion criteria are necessary in order to respect the women, the health care providers and the hospital setting in which the research was conducted. Another limitation is the contextual factors affecting each woman, such as whether or not they had a caesarean section or if they are dealing with other health issues, such as a chronic disease. While I did not want to exclude women who were dealing with these conditions, I was also aware during the interview and throughout data analysis that these conditions needed to be contextualized in the findings.

Data collection occurred between January 11th and February 12th, providing access to women from a variety of socioeconomic backgrounds. As the only interviewer, I had limited time to conduct in-depth interviews. While I did not turn anyone away from the

study, additional researchers, additional time, and additional economic resources would have provided an opportunity to talk with a larger number of participants who might have added different perspectives. Typically, a study of this type would rely on multiple researchers obtaining informed consent and multiple interviewers. With more researchers, I would have been able to reach many of the potential participants who were discharged before I could approach them. Another limitation is my identity as a young, white woman who is not a mother. This study employed a series of tactics to lessen the impact of the subject-object problem and to empower research participants, however participants may not have felt comfortable discussing all health issues with me. However, as a native New Englander, who has lived in Rhode Island, I feel confident that I established rapport with participants.

This dissertation revealed a number of priority health issues for these women, such as prematurity, stress and psychological issues, chemicals in foods and baby products, and the social challenges of breastfeeding, to name a few. Future research could address each of these issues independently. Future research should seek to incorporate more diverse points of view that I was unable to reach, such as women under 18, women facing serious illness, women who don't speak English, and women delivering in different settings. This study revealed intersections of race, class, and gender related to a variety of issues, such as cord blood banking, diet and nutrition, and communication channels. Future research should explore these complex interactions.

Although qualitative research cannot be generalized to other populations, access to a unique sample and adhering to feminist principles of research in this study provided empirical rigor, which presents the possibility of catalytic validity based on rigorous

audience research with the potential to inform the development of a social marketing campaign to improve the health and well-being of women and families in Rhode Island.

Theoretical Implications

This study contributes to the social marketing scholarly body of knowledge by developing the application of diffusion of innovations as a particularly relevant and useful theory. Findings suggest opportunities to apply diffusion of innovations theory within a social marketing framework to better understand women's health and the health of their families. By integrating diffusion of innovations theory with the social marketing framework, this dissertation answers the call to incorporate "theory of" campaigns research into health communication campaigns (Salmon & Atkin, 2003).

Findings confirm that diffusion of innovations theory offers a superior approach to social marketing (Lefebvre, 2001; Smith, 2004; Moseley, 2004) and provides a theoretical framework to understand the process of social change. Results indicate that diffusion of innovations theory offers an improved understanding of the audience and priority behaviors. This dissertation identified and considered potential connections and synergies between different priority health issue areas and their related behaviors. Findings described the value of looking at behavior "in the round."

This study moves diffusion of innovations theory forward by applying qualitative methodology to address a number of methodological critiques of diffusion research (e.g., pro-innovation bias, individual-blame bias, source bias). These concerns arise from the theoretical assumptions and the practical applications of diffusion research. According to Meyer (2004), most studies of diffusion of innovations theory rely on quantitative data of a single innovation, which is typically collected from a cross section of adopters after

widespread diffusion has already occurred. This study offered an alternative to this dominant methodology, suggesting "how" or "why" adoption may occur or fail to occur in a specific population. The synergy of diffusion of innovations, social marketing, and a qualitative method for this research provided a system of checks and balances to protect against the critiques of diffusion of innovations research.

Findings detail diffusion of innovations theory in a new way: by offering an illustration for how a qualitative study might determine criterion for innovativeness and adopter categories (i.e., innovators, early adopters, early majority, late majority, and laggards). Results suggest that diffusion of innovations theory provides an opportunity to segment audiences (i.e. adopter categories) based on understanding the audience's socioeconomic characteristics, personality values, and communication behaviors. Findings elevate diffusion of innovations as an exemplar theory to fulfill social marketing's focus on segmenting audiences to concentrate on behavior change in a specific population (Lefebvre, 2011). Diffusion of innovations theory strengthens social marketing's population-level approach to social change. In other words, diffusion of innovations offers an approach to segment audiences based on behavior change in a specific population.

Social marketing provides one approach to understanding the audience and to meeting the audience where they are (Fraze, Rivera-Trudeau & McElroy, 2007). Applying diffusion of innovations theory within a social marketing framework incorporates audience research in the theory and methodology of campaign planning. In many health communication campaigns based on diffusion of innovations theory, outside experts develop strategies to educate and promote healthy behaviors to the target

audience (Singhal, 2010). Social marketing offers an alternative approach to diffusing behaviors where desired health behaviors emerge by listening to the target audience.

This dissertation proactively examined how a social good is defined by the target audience. Specifically, diffusion of innovations theory offers a segmentation approach defined by understanding the audience exchange. Exploring the concepts in diffusion of innovations theory offers an avenue to insight. By talking to people and walking with them for a brief moment in their lives, this study offered an appreciation of the challenges faced by the target audience. This insight provides a deep understanding and knowledge of the audience that suggests campaign approaches, which will resonate with the target population.

Findings redefine the relationship between mass media and interpersonal communication in diffusion of innovations theory. Specifically, these results answered the question, "is communication via the Internet more like mass media communication or interpersonal communication?" (Rogers, 2003, p. 215). Findings suggest that new media is a new communication channel with a new set of rules. These results build on extant research calling for studies to better understand the interaction of various communication channels, including new media, in the diffusion process (e.g. Green, 2009; Meyer, 2004; Valente & Fosados, 2006). Results extend diffusion of innovations theory by suggesting new opportunities to develop the strength of weak ties (Granovetter, 1973) through the intersection of new media and interpersonal communication.

This study included women "on the margins" or those who are traditionally excluded from academic research. Participants represented a variety of socially and materially deprived communities. Specifically, women differed in age, parity,

race/ethnicity, and level of education. This study provided evidence that constructs from diffusion of innovations theory meet social marketing's focus on "tackling disadvantage" by understanding unintended consequences that widen health disparities in society. Specifically, participants' experiences of stigma and silence suggest that gender, as well as race and class, should be an integral component of the empty vessels fallacy in the diffusion of innovations theory.

Practical Implications

This study offers practical implications for the creation and delivery of social marketing initiatives. Findings indicate that formative audience research is essential for the development of effective social marketing campaigns, even though it is rarely allocated the appropriate time or resources and is often left out of the planning process altogether (McVey, Crosier & Christopoulos, 2010, p. 226). This dissertation's results offer a strategic social marketing approach, which identified health issues of concern to the target audience and potential connections and synergies between different health issues and related behaviors. By developing a more complete and holistic understanding and insight into the audience, this study goes beyond a particular issue and related behavior to understand behavior "in the round" (French, 2010, p. 125). Findings can be used to develop effective messages, communication channels, and materials for a communication campaign. These practical implications have been developed into a report for Women & Infants Hospital to develop a social marketing initiative to empower women in Rhode Island to develop and implement long-term solutions to improve their own health and the health of their children and families.

How social marketers can use diffusion of innovations theory. Social

marketing is a conceptual framework, which requires the incorporation of a congruent

theoretical perspective to plan and implement social change. Findings suggest an

opportunity for the intersection of social marketing and diffusion of innovations concepts.

Practical applications of diffusion of innovations theory may include agenda setting,

health literacy, the role of new media technology, and entertainment education.

Specifically, this study explicated four key concepts in social marketing (e.g., social

good, marketing mix, behavior change, and audience) that are operationalized through the

investigation of four key concepts in diffusion of innovations theory (e.g., innovation,

communication channels, social system, and adopter categories).

Segmenting audiences. Social marketing suggests that insight into the audience

builds the foundation for audience segmentation. This study found that diffusion of

innovations theory offers one way to segment audiences in a social marketing campaign

(i.e. adopter categories: innovators, early adopters, early majority, late majority, and

laggards) based on understanding the audience's socioeconomic characteristics,

personality values, and communication behaviors. Findings support the integration of

diffusion of innovations theory's emphasis on relationships and social marketing's

transactional focus to improve the use of best practices in social marketing initiatives

(Dearing, Maibach & Buller, 2006). Results indicate a number of places where social

marketing and diffusion of innovations may intersect. For example, participants identified

a number of health issues, which may be a potential social good (or innovation) in a

social marketing initiative.

Social marketing emphasizes behavior change with a focus on exchange theory, including benefits, barriers, and competition. Diffusion of innovations theory offers complementary concepts, such as incentives, which mirrors the concept of benefits in social marketing. Specifically, this study identified how these women identify their health information needs, including the benefits and barriers of adopting healthy behaviors, and what they say they need to change their behavior, such as reminders, knowledge, skills, and social support. In addition, women's perceptions and use of mass media, new media and interpersonal communication channels were explored. Findings suggested that these mothers of newborns embody and challenge the mother-child dyad in various ways, resist the biomedical paradigm, and envision new ways to interact in their social networks.

Understanding "me" time. Participants reformulated the mother-child dyad by letting go of superwoman. These women recognized that in order to care for their newborns, they first need to care for themselves. Social marketing campaign planners should incorporate the importance of "me" time in their approach to mothers. The practical implication of this finding is that pregnancy and childbirth provides a time and space when women reevaluate their health and commit or recommit to a healthy lifestyle. As a result, this period in women's lives offers an opportunity for campaigns to access a group of interested and aware individuals. Findings also suggest the importance of the intersection of maternal and child health, including these women's understanding of themselves as a role model regarding diet/nutrition and/or exercise. This finding influences the design of campaigns by focusing on women's understandings of the duality of reproductive health.

Building the medical home model. These women resisted the biomedical paradigm by trusting themselves and listening to their bodies. Participants resisted medical authority by questioning diagnoses and medical recommendations. These women described a contest over their bodies during the pregnancy and postpartum period, including physicians dictating what they could eat and when they could exercise. Participants also described questioning the expert by valuing the personal narrative and storytelling of other mothers. The practical implication of this finding is that campaign planners should be careful to develop social marketing initiatives in collaboration with target audiences, instead of allowing experts to dictate the subject of interventions. In addition, campaigns should understand the role of the physician as health advisor and offer information from a variety of sources, which can empower the patient with the right questions to ask. Findings also suggest an opportunity for social marketers to build pediatric family-centered services to address the health needs of mothers and babies (Brehaut et al., 2009). Participants suggested the importance of the overlap between OB/GYN and pediatrician; however, they were unsure of the extent these providers were willing to overlap. This finding calls on obstetricians and pediatricians to address communication between providers to improve health outcomes (Iams, et al., 2011).

Connecting online. Participants envisioned new ways to interact with their social system. The marketing mix in social marketing, particularly the concept of promotion, benefits from the explication of communication channels in diffusion of innovations theory (i.e., mass media, new media, and interpersonal communication). Diffusion offers a unique focus on social systems and relationships (e.g., opinion leaders, social networks, and system norms). The practical implication of this finding is that pregnancy emerged as

a time when campaign planners can access women in new ways online. For example, many of these women moved outside of their comfort zone by joining online communities or downloading new apps. Participants expected and sought personalized, tailored information regarding their highest priority health issue. These women wanted to be able to sign up to access information about topics they were personally invested in, such as diet, exercise, and cooking homemade baby food, etc. Findings suggest that new media favors resistance and these women were able to break women's health taboos online. As a result, campaign planners could benefit from introducing new ideas online and capitalizing on the lack of media boundaries and strength of weak ties favored in new media.

Conclusion

Social marketing offers a systematic, multidisciplinary framework to develop best practices in health communication research and practice. According to Homel and Carroll (2009), "one of the most well developed and empirically grounded frameworks for systematically analyzing and implementing a process for transferring evidence-based knowledge into action can be found within the principles of the social marketing approach" (p. 2). This approach provides a distinctive focus on audiences and marketing solutions that offers an improved roadmap for health communication research and practice. By elevating the needs and wants of the audience, social marketers are able to design the most effective health communication campaigns. Social marketing shifts the focus away from "expert" solutions that fail to resonate with audiences. A social marketing approach provides a more robust framework for health communication initiatives.

Relying on social marketing concepts and tools means that change agents can depend primarily on a single approach to social change. They do not need an extensive background in community mobilization skills or political theory or require consultants with such capabilities. Social marketing can serve as the change agent's basic platform and can carry a good deal of the intellectual and practical burden (Andreasen, 2006, p. viii). In this way, communication and social marketing provide improved evidence-based public health with maximum impact despite limited resources (Maibach et al., 2007).

This study examined how diffusion of innovations theory offers utility to social marketers. Results suggest ways that diffusion of innovations concepts may be integrated into the design and development of social marketing campaigns. Specifically, diffusion of innovations theory can strengthen the development and delivery of social marketing campaigns, thereby improving and increasing their potential impact. These findings offer important insights for campaign planners and change agents.

In this study, more innovative participants perceived themselves as opinion leaders based on their information seeking capability. These women believed that technological savvy included new media literacy. Results suggest practical opportunities for campaign planners to access audiences through Facebook, mobile applications, texting, email, and community forums. This study also describes a nuanced account of how participants search for information on Google, providing important insight for change agents.

This study suggests that race, class, and gender should be an integral component of the empty vessels fallacy in the diffusion of innovations theory. This research provides a nuanced perspective of women as an audience. Investigating women's identity,

autonomy, and health perceptions offers an improved opportunity to understand women's health issues within a social marketing framework. Gender played an important role in how participants made meaning of their health. Participants described experiences of stigma and silence related to health and how new media offered opportunities to overcome these challenges. Women resisted the biomedical paradigm in various ways, such as through trusting their bodies and valuing storytelling and personal narrative as a form of expertise.

Finally, this study identified potential connections and synergies between different health issues and their related behaviors. Foremost, participants made meaning of their health by reformulating the mother-child dyad, a process in which these women acknowledged the importance of their own health in caring for their child. Findings may suggest future approaches to develop a social marketing initiative to empower women to develop and implement long-term solutions to improve their own health and the health of their children and families.
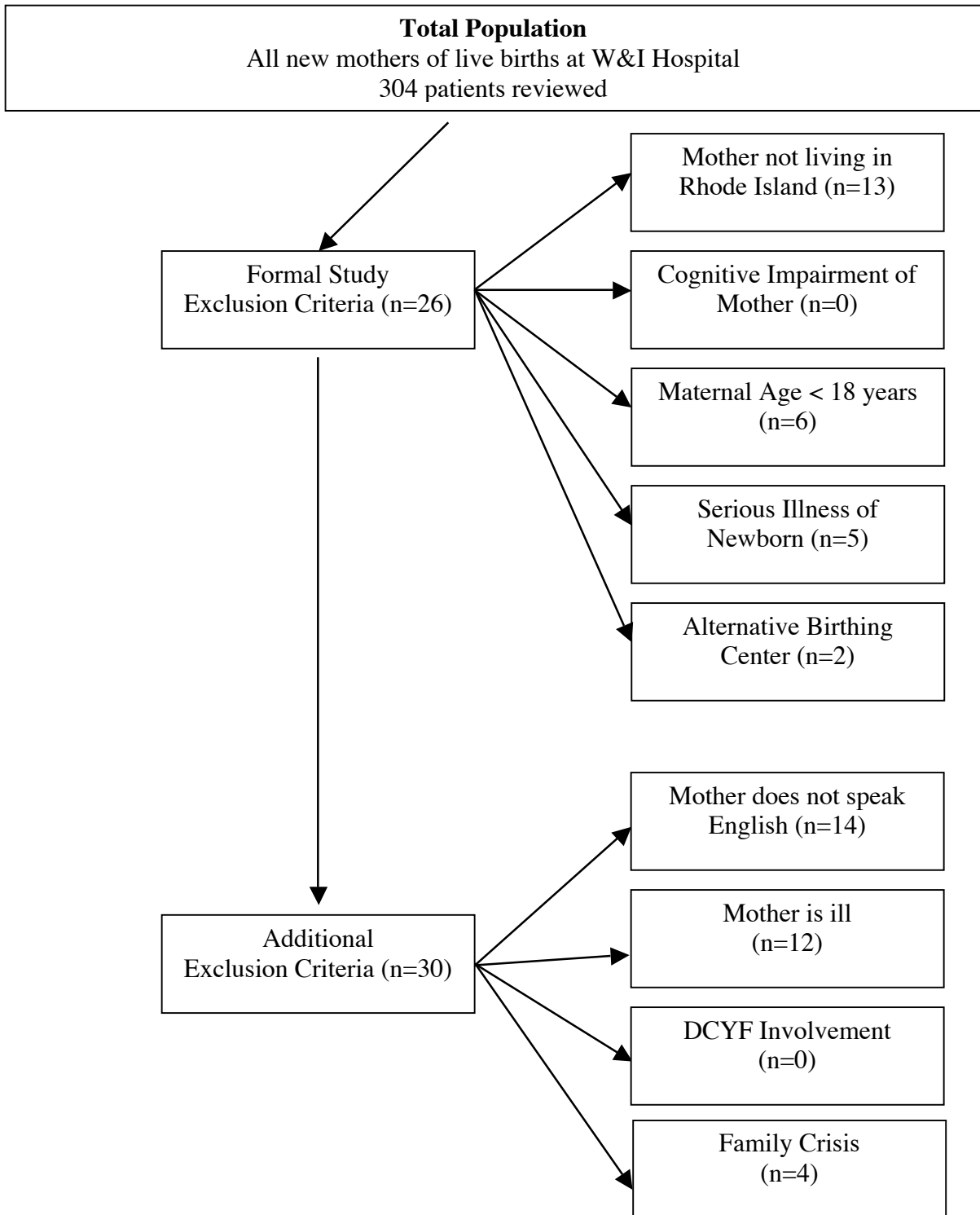
Table 1

French and Blair-Stevens (2010) Social Marketing Benchmark Criteria

Benchmark	Explanation
1. Customer Orientation	Understanding the customer or audience is the cornerstone of social marketing research and practice. Researchers conduct investigations to understand the lives, experiences, values, and needs of audience members.
2. Behavior and Behavioral Goals	Social marketing research and practice identifies behavior change goals and details specific measurable objectives.
3. Theory Based	Social marketing offers an "open integrated theory framework" to ensure the application of the most effective evidence-based theories across disciplines.
4. Insight	Social marketing seeks to move beyond demographic formative research to achieve a deeper understanding of people's lives.
5. Exchange	Benefits and barriers to behavior change create a foundation for developing incentives and/or rewards that will motivate people to change.
6. Competition	Internal and external factors compete for the time, attention, and behavior of target audiences. Social marketing identifies and seeks to mitigate these influences.
7. Segmentation	Segmentation approaches move beyond psychographic research to understand what "moves and motivates" target audiences.
8. Methods mix	Incorporates the marketing mix, or the 4 P's of product, price, place, and promotion. In addition, the intervention mix may target policymakers.

This table was adapted from French and Blair-Stevens (2010) social marketing

benchmark criteria (pp. 37-41)

Table 2

Exclusion Criteria

Total Population All new mothers of live births at W&I Hospital 304 patients reviewed	

Formal Study
Exclusion Criteria (n=26)

Mother not living in
Rhode Island (n=13)

Cognitive Impairment of
Mother (n=0)

Maternal Age < 18 years
(n=6)

Serious Illness of
Newborn (n=5)

Alternative Birthing
Center (n=2)

Additional
Exclusion Criteria (n=30)

Mother does not speak
English (n=14)

Mother is ill
(n=12)

DCYF Involvement
(n=0)

Family Crisis
(n=4)

Appendix A- Semi-structured in-depth interview guide

<u>Interview Protocol</u>

Before we begin our conversation, I want to thank you for talking with me today. I want you to know that your opinions are very important and there are no right or wrong answers. You don't have to answer any questions, you can ask me to skip a question, and you can end the interview at any time. All of your answers will be kept confidential.

And I would like to audio-tape our conversation so that I can catch all the details later.

[SIGN CONSENT FORM]

In the Hospital

Let's start with some general questions about you and your family.

1.   How are you feeling today?

2.   Could you tell me a little about your family?
        Probe: Is this your first child? What is his/her name?

After Discharge from the Hospital

Let's start with some general questions about your daily routines and what you like to do.

1.   Describe for me what a typical day is like for you.
        1a.   How are weekdays different for you than your weekends?

2.   What parts of your typical days are most enjoyable?
        Probe: Activities, things you do, people you see that are the best part of your days? Why?

Okay, now I would like to talk about health, in general.

3.   What comes to mind when you think about health? What do you think about when you think about health?
        Probe: Why were these your first thoughts?

4.   I want you to think about 12 months ago, before you were pregnant. What were some health issues you thought about back then?
        Probe: Why these issues? What was your biggest health concern?

5.   Thinking about today, what are some health issues you are thinking about right now?

Probe: Why these issues? What is your biggest health concern? If health issues are about baby, then ask "what are some health issues you think about for yourself?"

6. For the rest of the interview, I want to focus on your highest priority health issue. What would you say is your highest priority health issue?
Probe: If health issues are about baby, then ask "what are some health issues you think about for yourself?"
[*If participant did NOT mention any health issues, Probe:* contraception? Nutrition and
exercise? feeding the baby? Putting the baby to sleep?]

7. Where do you go for more information about [*highest priority health issue*]? In other words, what sources of information do you use when you want to learn more about it?
Probe: How often do you use these sources?
Probe: Can you offer some examples of any health information about [*highest priority health issue*] you recently found?
If participant doesn't mention the following channels, Probe: Could you tell me about how, if at all, you use _____ to find out more information regarding [*highest priority health issue*]?

  Traditional Media:
  - Books
  - Magazines
  - Television
  - Radio

  New Media:
  - Internet
  - Online communities
  - Online support groups
  - Social networking sites (Facebook)
  - Microblogging sites (Twitter)
  - Blogs
  - Mobile applications (apps)
  - Texts
  - Location-based applications (FourSquare)
  - Photo-sharing (Flickr)

8. Where do you hear about [*highest priority health issue*]?
Probe: Friends?
Probe: Family? Mother/Aunts?
Probe: Doctor's office?
Probe: TV or in magazines?
Probe: Who is your most trusted source of information about [*highest priority health issue*]? Why?

9. Please describe for me a time when you discussed [*highest priority health issue*]with people in your life?
Probe: Why did you discuss this?

10. Please describe for me your relationship with your [health care provider] that you see on a regular basis?
Probe: What role does your [health care provider] play in your personal health?
Probe: Have you ever disagreed with your [health care provider's] advice? What would happen if you disagreed?
Probe: What does your [health care provider] say about [*highest priority health issue*]?

11. Please describe for me a time when you adopted a new health behavior? It could be a prescription medicine, a medical treatment, or even the food you eat, or your exercise?
Probe: Could you tell me about how you made the decision? What factors did you consider?
Probe: Who did you talk with about this decision?
Probe: Who was most influential as you made this decision?

Next, I want to ask you some questions about health campaign messages.

12. What health campaign messages have you seen or heard about [*highest priority health issue*]?
Probe: What did you think about those messages?
Probe: If none, then ask: Have you seen any other health campaign messages telling you what to do to be healthy?

13. How would you most like to receive health messages regarding [*highest priority health issue*]?
If participant doesn't mention the following channels, Probe: Could you tell me about how, if at all, you would like to use _____ to receive health messages?
- Social networking sites (i.e. Facebook)
    - *Probe:* How often do you use Facebook? Who are you friends with on Facebook? Who do you communicate with most often?
- Microblogging sites (i.e. Twitter)
    - *Probe:* How often do you use Twitter? Who do you follow on Twitter?
- Blogs
    - *Probe:* What type of blogs do you visit? How do you find these blogs? How frequently do you read these blogs?
- Mobile applications (i.e. apps on your cell phone)
    - *Probe:* What type of apps do you use right now? What apps do you use most frequently? What makes an app useful to you?
- Texts

- *Probe:* How often do you text? Who do you text with (do you receive text messages from your doctor?)? What do you think about receiving text message reminders about appointments? How often would you be willing to receive health messages via text? What type of health messages would be most helpful to you? Do you have free text messages?
- Location-based applications (i.e. FourSquare)
  - *Probe:* How often do you use FourSquare? What type of places are you visiting when you use FourSquare? Why these locations?
- Photo-sharing (i.e. Flickr)
  - *Probe:* How often do you use Flickr? What type of photos do you post/view on Flickr?

14.   What kind of health messages are you most interested in receiving?
Probe: Health messages about your health? Health messages about your baby's health?
Probe: What about health messages regarding [*highest priority health issue*]?

15.   What information do you most need about [*highest priority health issue*]?
Probe: Reminders?
Probe: Knowledge?
Probe: Skills, techniques?
Probe: Social support?

That is all the formal questions that I have prepared for our interview.

16.   Are there any questions you wish I would have asked that I didn't?

17.   Is there anything you wish to add?

Thank you very much for your time!

DEMOGRAPHIC QUESTIONNAIRE

To help ensure we are gathering insights from a diverse group of participants, I would like to conclude the interview by asking you some demographic questions. Because we are not revealing identities of our participants in the study, the demographic information will not be associated with you by name.

- What is your birthday?
- How many children do you have?
- What is your race/ethnicity?
- What is the highest level of education you have attained?

Appendix B: Screening Sheet

WOMEN'S VOICES SCREENING FORM

SCREENING CRITERIA *(obtained before patient contact via Cerner/IDX)*

1. Date patient information reviewed: ____/____/_____

2. Unit: 5E / 6E / 6W / Other: _____ / Unknown

3. Maternal age: _____   *(if <18, ineligible → check box below)*

4. State of residence: _____ (*if not RI, ineligible → check box below*)

5. Number of living children (including any just born): _____

6. Check applicable INELIGIBLE flag(s) below: *(check all that apply)*

☐ ABC   ☐ Baby is deceased/stillborn
☐ Maternal age <18   ☐ Mother is ill
☐ State of residence is not R.I.   ☐ DCYF involvement
☐ Doesn't speak English   ☐ Family in crisis
☐ Cognitive issues   ☐ Other: _____
☐ Baby is seriously ill

7. If none of the boxes above are checked off: ☐ ELIGIBLE for the study
   If one or more boxes above are checked off: ☐ INELIGIBLE for the study → *skip to 13*

FOR ELIGIBLE SUBJECTS: _____ *(initials)*

8. Did the patient consent to being in the study? ☐ YES → *skip to 10* / ☐ NO

9. Why not consented? *(check all that apply)*
   ☐ Discharged before consented → *skip to 13*
   ☐ Refused – In another study → *skip to 13*
   ☐ Refused – Not interested → *skip to 13*
   ☐ Refused – Not enough time → *skip to 13*
   ☐ Other: _____ → *skip to 13*

NOTES: _____ *(initials)*

FOR CONSENTED SUBJECTS: _____ *(initials)*

10. Date and time of consent:
    ____/____/_____ ____:____ AM / PM

11. Did the S complete the full interview?
    ☐ YES / ☐ NO → *skip to 13*

12. Date, time of interview completed/scheduled:
    ____/____/_____ ____:____ AM / PM

FOR ALL SUBJECTS: _____ *(initials)*

13. **FINAL STATUS CODE:** *(check one)*
    ☐ INELIGIBLE
    ☐ NOT CONSENTED – MISSED
    ☐ NOT CONSENTED – REFUSED
    ☐ CONSENTED – HOSPITAL INTERVIEW
    ☐ CONSENTED – TELEPHONE INTERVIEW

Page 1 of 1
Version 1.0

Appendix C- Approved IRB Authorization Agreement between Women & Infants Hospital and University of Maryland, College Park and Approved IRB Protocol

Version Date: 8/12/2011

Institutional Review Board (IRB) Authorization Agreement

Name of Institution or Organization Providing IRB Review (Institution/Organization A):

Women and Infant's Hospital of Rhode Island
Federalwide Assurance FWA#00000056   IRB Registration #: 00000746

Name of Institution Relying on the Designated IRB (Institution B):
University of Maryland, College Park
Federalwide Assurance FWA#00005856

The Officials signing below agree that the University of Maryland, College Park may rely on the designated IRB for review and continuing oversight of its human subjects research described below:

(X) This agreement is limited to the following specific protocol:
WOMEN'S VOICES: INTEGRATING DIFFUSION OF INNOVATIONS THEORY TO
DEVELOP A WOMEN'S HEALTH SOCIAL MARKETING INITIATIVE
Name of Principal Investigator:_Patrick M. Vivier, MD, PhD
Sponsor or Funding Agency: Brown University Healthy Communities Initiative (including funds
received from Dupont as part of an agreement between Dupont and Attorney General Patrick Lynch)
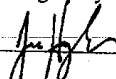Award Number, if any: _N/A___

The review performed by the Women & Infants Hospital of Rhode Island IRB will meet the human subject protection requirements of University of Maryland, College Park's OHRP-approved FWA. The IRB at Women & Infants Hospital of Rhode Island will follow written procedures for reporting its findings and actions to appropriate officials at University of Maryland, College Park. Relevant minutes of IRB meetings will be made available to University of Maryland, College Park upon request. University of Maryland, College Park remains responsible for ensuring compliance with the IRB's determinations and with the Terms of its OHRP-approved FWA. This document must be kept on file by both parties and provided to OHRP upon request.

Signature of Signatory Official (Women & Infants Hospital of Rhode Island)

_____ Date: _12/20/11_
Thomas Hughes
Vice President, Clinical Support Services

NOTE: The IRB of Institution A must be designated on the OHRP-approved FWA for Institution B.

Signature of Signatory Official (University of Maryland, College Park):

_____ Date: _12/16/11_

Print Full Name: James Hagberg   *Institutional Title*: Chairperson of the UMD IRB Committee

Women's Voices: Health and Messages
Approved IRB Protocol

Women & Infants

Project No: 11-0118

INSTITUTIONAL REVIEW BOARD
REPORT ON COMMITTEE ACTION

PRINCIPAL INVESTIGATOR: Maureen Phipps, M.D.

PROTOCOL TITLE: Women's Voices: Integrating Diffusion of Innovations Theory to develop a Social Marketing Initiative.

The committee appointed to review proposals for clinical research and other investigations involving human subjects has reviewed the proposal identified above.

DATE OF REVIEW: 11/28/2011

DATE OF REVIEW OF RESPONSE: 12/12/2011

COMMITTEE ACTION: Approved study through 11/27/2012 with Dr. Vivier as the principal investigator
And Dr Phipps as co-investigator.
Approved protocol dated 10/22/2011.
Approved main consent form and audio consent form dated 10/22/2011.
Approved screening tool dated 12/5/2011.

Signature applied by Paul DiSilvestro on 12/16/2011 12:02:34
PM EST

_____
For the Institutional Review Board
Paul DiSilvestro, M.D.
Chair

cc: Patrick Vivier, MD, PhD
       Susan Swanson-Kubaska, RN

Date issued: December 12, 2011

WOMEN & INFANTS HOSPITAL   101 DUDLEY STREET   401-274-1100   AFFILIATED WITH
OF RHODE ISLAND   PROVIDENCE   FAX 401-453-7666   THE WARREN ALBERT MEDICAL
                                   RHODE ISLAND 02905   WWW.WOMENAND INFANTS.ORG   SCHOOL OF BROWN UNIVERSITY
A CARE NEW ENGLAND HOSPITAL

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Background

Women's health serves as a marker for societal health and wellness. Women champion access to health care services for their children and families. Addressing women's social position and improving the health of women offers opportunities for improved health outcomes for society. This study offers a "value-to-user" social marketing approach, which seeks to understand what women know, believe, value, and say will help them to improve their health and by extension, the health of their children and family members.

The mother-child dyad offers a unique view of the duality of women's reproductive health. Particularly in the time period following the birth of a child, the health of mother and baby remain inextricably linked. The postpartum period requires the mother to take care of her own health in order to successfully care for her infant. The importance of personal health and self-care are challenged by the immediate and pressing needs of the baby. In this way, women may overlook their own health needs. Despite the importance of the mother's well-being in the postpartum period, the health care system often relegates women to the role of caretaker. Despite numerous appointments with pediatricians during the first months of a baby's life, mothers often fail to receive the health care services that they need (Iams, E. F. Donovan, Rose, & Prasad, 2011). Iams, et. al (2011) suggest that although obstetricians and pediatricians share the goal of health for both mother and baby, miscommunication between providers may result in poor outcomes.

Public health practitioners suggest a move toward pediatric family-centered services to address the health needs of mothers and babies (Brehaut et al., 2009). In the mother-child dyad, although pediatricians focus on the health care of the baby, experts argue that they should also be involved in the screening and referral of women's health needs. In this way, the baby serves as an opportunity to address important health needs of the mother. The delivery of family-centered pediatrics is an important component of the pediatric medical home (Bair-Merritt et al., 2008). Approximately half of children in the U.S. have access to all components of a pediatric medical home, which includes family-centered care (Strickland, J. R. Jones, Ghandour, Kogan, & Newacheck, 2011). The opportunity for pediatric intervention to recognize mother's health issues is well documented. Since pediatricians care for infants and small children on a frequent basis, family pediatrics and the medical home model offer a unique opportunity to address mother's health issues.

The purpose of this study is to gather opinions and insights from diverse women to develop effective messages and communication channels on topics related to maternal and child health. The short-term goal of this research project is to tear down barriers and provide a space for women to speak for themselves. Based on this research, a social marketing initiative will be proposed to empower women to develop and implement long-term solutions to improve their own health and the health of their children and families. Specifically, the study will explore how women identify their health information needs, including the benefits and barriers of adopting healthy behaviors, and what they say they need to change their behavior, such as reminders, knowledge, skills, and social support. Women's innovativeness (i.e. the degree to which an individual is relatively earlier to adopt new ideas than other members of a social system) will be explored in relation to personality values, communication behaviors, system norms, and social networks.

Finally, women's perceptions and use of mass media and interpersonal communication channels will be explored.

Study Aims

1. Understand how women make meaning of their own health and how they perceive the duality of the mother-child relationship in adopting healthy behaviors.
   - Determine what women identify as health information needs.
   - Determine what women say will help them adopt healthy behaviors for themselves and their baby (e.g., reminders, knowledge, skills, social support).
   - Determine what motivates women and what barriers keep women from adopting healthy behaviors for themselves and their families.
2. Examine how women's innovativeness (i.e. the degree to which an individual is relatively earlier to adopt new ideas than other members of a social system) impacts their innovation-decision process regarding issues of health.
   - Determine the characteristics of women who adopt healthy behaviors relatively earlier or later in the diffusion process? (e.g., personality values and communication behaviors)
   - Determine how system norms and social networks impact women's innovativeness.
3. Understand how women use mass media and interpersonal communication channels regarding issues of health.
   - Determine how social networks influence the way a new health idea spreads.
   - Determine what sources/channels of health communication are most influential to women.

Methods

Qualitative formative research offers a deep understanding of women's lives, circumstances, and aspirations. Qualitative methods will be used to collect and analyze data. Specifically, in-depth interviews with new mothers will provide insight into how women make meaning of their health and the health of their families.

Study Setting

The study will be conducted at Women and Infant's Hospital, Providence, RI. Women and Infant's Hospital has the tenth largest obstetrical service in the United States, with over 9,700 births per year (http://www.womenandinfants.org/body.cfm?id=10). Over 70% of births in Rhode Island occur at Women and Infant's Hospital.

Study Population

All live births at Women and Infant's Hospital during the study enrollment period, except for those born in the Alternative Birthing Center, will be considered eligible for the study. We will only be recruiting on the hospital inpatient wards, not at the Alternative Birthing Center. Because the Alternative Birthing Center at Women & Infants hospital has minimal births per year compared to the patients where recruitment will be occurring, we do not believe that omitting recruitment from this area will affect the outcome analysis.

We will begin enrolling study participants as soon as possible after IRB approval is obtained and will continue until February 1st or until a point of theoretical saturation has

been achieved, which will include at least 50 women and not more than 100 women. As there are approximately 800 births per month at Women and Infants Hospital, the enrollment period will likely last approximately two months from December 1st through February 1st.

Formal exclusion criteria include: (1) the mother not living in Rhode Island at the time of the child's birth, (2) cognitive impairment that prevents obtaining consent and answering the study questions, (3) maternal age less than 18 years, (4) serious illness of the newborn such that it would be upsetting to contact the mother, (5) the family is already participating in multiple studies so that an additional study would be a burden. (6) Mothers must be able to communicate in English to participate in the study. (7) Mothers under stress including DCYF, serious illness and family crisis's will be excluded. We want to be sensitive to the hospital setting in which we will be working. If the nurses are uncomfortable that families are in a crisis and it would be upsetting to contact them, we want to respect that concern and not approach the mother. The research staff will work with the nursing staff to determine this on a case-by-case basis. The research staff have been working with the nursing staff to identify what issues could lead to them feeling that it was not appropriate for us to contact families. These items are included in the screening form. To clarify the process, in addition to the standard exclusion criteria stated in the protocol, mothers will not be approached if the mother or child is seriously ill and in the opinion of the nursing or research staff it would be upsetting to contact them. Mothers will also not be approached if the nursing or research staff determine that the child is in DCYF custody or under a DCYF hold, as again this is a family crisis as well as having the further complication of the mother possibly not having parental responsibility. Mothers will also not be approached if there is some other family crisis identified and the nursing or research staff feel it is inappropriate to approach the mother. In contrast to the formal exclusion criteria, these issues may be in flux during the mother's hospitalization. It is possible that on the first day after birth, the newborn or mother might be ill and approaching the mother would be considered inappropriate. However, on the second day after birth the situation might be much improved and the mother could then be approached. It is also possible that the situation will persist and the mother will be discharged without being approached, therefore meaning the family will not be enrolled in the study. We do not expect this will happen frequently and we do not expect that it will significantly affect our sample. We will have the data from the screening form to assess the extent to which families are not enrolled either because of the formal exclusion criteria or because families were not approached due to concerns described above. This will help us identify the adequacy of our sample.

Nursing staff will be consulted to learn if any patients do not meet criteria and therefore should not be approached. In addition to talking with the nursing staff, we will also have the Women and Infant's research staff who work on this project to use the hospital's computer system to pre-determine eligibility, and also to record zip codes. We are doing the screen for eligibility to avoid contacting mothers who are ineligible to participate in the study. Attached is the screening sheet that will be used in the screening process. We will use the zip code and other information from the screening sheet to determine if there are any differences between those recruited for the study, those found ineligible and those

that declined to participate. The paper screening sheet will be destroyed after the data is entered into a password-protected database by certified study personnel. Any zip code information will only be reported in aggregate form.

Persons who will be responsible for recruiting patients for this study are Women & Infants Hospital staff in collaboration with the co-investigator. The co-investigator will conduct the interviews with all of the participants. The co-investigator will wear a colored uniform jacket with a name badge identifying her as research staff from Brown. She will also be wearing a name badge with picture ID from Women & Infants, as she will have undergone a standard "processing" through Women & Infants Volunteer Services office for clearance to work on the units for the purposes of this study.

The interview will last approximately one hour. Participants will receive a $25 gift card to compensate them for their time and efforts in the study. The interview protocol is included in the appendix. Informed consent will be obtained from those mothers who are interested in enrolling in the study. Consent forms will be available in English. A sample consent form is included in the appendix of this proposal. After obtaining informed consent, mothers will be offered the opportunity to participate in the study in two ways:

- In-person while hospitalized at Women & Infants Hospital, **or**,
- Telephone interview within one-three weeks of discharge from Women & Infants Hospital.

Telephone Interview for Mothers who Prefer this Approach

For mothers who prefer a telephone interview, they will be asked to schedule a date and time for the interview within one week of discharge. The scheduled interview will last approximately one hour. The researcher will call participants one day prior to the interview to remind them about the interview. If the participant does not participate in her interview as scheduled, the researcher will make up to 5 additional call attempts over the course of two weeks in order to reach the participant. The researcher will mail a $25 gift card to compensate participants for their time and efforts in the study. The interview protocol for the telephone interview will be the same as the interview protocol for the in-person interview at Women and Infant's Hospital.

Compensation for Study Participants

Study participants will receive a $25 gift card to compensate them for their time and efforts in the study.

Data Management and Data Analyses

We will have identifiers for study participants as we may need to contact them for telephone interviews. To protect confidentiality, study data for analyses will not contain names but rather we will use a study specific identification number. The key connecting the name to the analysis data will be kept in a separate file. This research project involves making audio tapes of the interview for purposes of accuracy, which will be transcribed in order to analyze the interviews in detail. The sound file and transcription of the interview will then be entered onto a secure computer at Brown University. All researchers have completed ethics and HIPAA training in the conduct of human subjects

research and will treat all data with strict confidentiality. Data will be analyzed using appropriate data analysis software including HyperRESEARCH, SPSS and Excel. Data will be maintained on a server located at 121 South Main Street. The server is housed in a physically secured location in 121 South Main Street. Access is limited to authorized systems management staff attached to the Center for Gerontology. The server's room is climate-controlled and contains an isolated drypipe fire suppression system. The servers are powered through a UPS which will get them through short power outages, and there is a standby generator which will automatically provide power during extended outages. The server is secured from most external network access by the LAN's perimeter firewall, as well as its own local firewall. Analysis staff will access the server via Microsoft's encrypted Remote Desktop protocol, employing the highest level of encryption supported. The server is further configured to accept connections from Remote Desktop clients within specific Brown-controlled networks. User accounts and authorizations are controlled within the Center's infrastructure, but all security principals for this project are maintained separately from other Center projects, in order to lessen the chances of an operational error. All data will be stored physically within this one server, not accessible via network protocols from outside the box (insofar as technically feasible), and access within the server is limited to specific authorized individuals. Furthermore, the server itself will only accept logons from specific users permitted to work with this data. Backups are performed to a local tape drive, in coordination with other Center backups but not physically mixed on backup media with other data. Backups are maintained securely either onsite or offsite in common with other Center backups.

Project Title: Women's Voices, Health and Messages
Consent Form

Section A: Purpose and Scope
Research has shown that after the birth of a child, the health of mother and baby are linked together. You are being asked to be part of this study because you just gave birth. This study seeks to understand women's thoughts and opinions about health, how women stay healthy, and women's health needs. The purpose of this study is to learn the best way to reach women with important health information. *Your participation in this research study is optional, and if you choose to participate your involvement in this study will not exceed one month.*

Section B: Methods
We are asking you to participate in this important *research* study. If you agree to be part of the study, you will be asked to complete an interview, which will take about an hour depending on how much information you have to share. The interview will be done either face-to-face here in the hospital or by telephone within a week after you go home. The interview will be scheduled a time convenient for you. The researchers would like to tape record the interview to make sure we get everything you share, but it is not required. If you agree to the audio taping, there is a separate consent form.

We will ask you a series of questions about your health, your family's health, and how you stay healthy. We will also ask what health information you might need, who you talk with about health issues, and different ways you learn about health information, such as television, newspaper, radio, the Internet, or Facebook. You are free to end the interview at any time or to refuse to answer any questions you choose.

If you agree to participate in the study, you will receive a *$25 gift card* in appreciation for your time and effort.

You may choose to withdraw from the study at any time. Withdrawing from the study will not affect the care that you or your baby receives at Women and Infants Hospital. There are no additional costs to you for participating in this research study.

Section C: Possible Benefits
Your participation may help us learn how to improve the health of women and families. Our hope is that this information will allow us to better promote the health of Rhode Islanders.

Section D: Potential Risks and Discomfort
The risks to participating in this study are small. You may feel uncomfortable answering some of the questions about your health. All our staff are professionals and will not talk to other people about the things you have said. You are free to end the interview at any time or to refuse to answer any questions you choose. To help ensure the privacy of your information, all of your answers will be identified by a special number, not by your name. You or your child's name will not be used in any published reports about this study.

Section E: Authorization

1. I have been told about this study. The procedures have been discussed with me. I have had a chance to ask questions. My questions were answered to my satisfaction.

2. I agree that my confidential, protected health care information may be shared with individuals, persons and groups associated with this study. My confidential health care information will be used only as necessary to participate in this study. Except when required by law, I will not be identified in study records disclosed outside this Hospital or Brown University by name, social security number, address, telephone number, or any other direct personal identifier. For records disclosed outside this Hospital or Brown University the investigator or his staff will assign me a unique identifying code. The key to the code will be kept in a secure location at Brown University and/or Women and Infant's Hospital.

3. Any information from the study will be used for education or research purposes. My name and my child's name will not be used.

4. I will be told of any changes to the risks or benefits of this study.

5. I do not have to take part in this study.

6. I am free to withdraw my consent at anytime. I am free to stop taking part in the study at any time or to refuse to answer any questions that I choose. I will still receive the best care possible for me and my child. If I want to withdraw I should contact Dr. Patrick Vivier in writing and let him know I am withdrawing. His mailing address is Box G-S121, Brown University, Providence, RI 02912. If I withdraw my consent or permission the information which has already been collected about me by the researchers will be destroyed or de-identified so that all links to my identity are broken, unless I give explicit permission for the researchers to retain the confidential information which has already been collected to complete research reports.

7. If I have questions about this study, I may call the Principal Investigator, Dr. Patrick Vivier, at 401-863-2034. If I have questions about my rights as a research subject, I may call Barbara Riter, Manager, Research Administrator, at 401-453-7677. The contact person for the Research Protections Office at Brown University is Susan Toppin, Assistant Director 401-863-2777.

8. I will be given a copy of this signed consent form.

I have read this consent form and decided that I, _____
will participate in the research project described above. Its general purposes, the nature of my involvement, and possible hazards and inconveniences have been explained to my satisfaction. My signature also indicates that I have received a copy of this consent form.

Please check if you agree to either:

☐   I agree to complete a one-hour in-person interview with a trained researcher about issues related to my health and my family's health during my hospital stay.

OR

☐   I agree to complete a one-hour telephone interview with a trained researcher about issues related to my health and my family's health, which will be scheduled today for a time within one week of my discharge from the hospital.

Signature: _____ Date: _____ Time: _____ AM/PM

Name (please print): _____

If not for self: relationship to patient: _____

Person who explained study: _____

Date:_____

Hospital policy states that the signed original consent form is to be included in the subject's medical record. One copy of the original signed record is to be given to the subject. One copy of the original signed original consent form should be retained in the investigator's files.

CONSENT FOR AUDIO RECORDING IN RESEARCH AND EDUCATION

Date:_____

1.   I (or _____for _____)

      give permission to Dr. Patrick Vivier and staff to

      tape record _____ at *Women & Infants Hospital of Rhode Island*

                        (subject's name)

      or during a telephone interview.

2.   I agree these recordings may be used both *within and without* the hospital for purposes of medical education and research. ___ Yes   ___ No

3.   I give permission for written publication of quotes selected from the audio recording. Such publication will not identify me by name.   ___ Yes   ___ No

4.   This permission has been given freely and willingly by me. My refusal to give permission will not influence in any way the treatment which I will receive.

               Signature: _____

                   (Subject or Person Authorized to Give Permission for Subject)

               Relationship (if applicable):_____

Acknowledgment Statement:

The undersigned confirms that consent, as described above, has been given by this subject.

_____   _____

Person Obtaining Consent   Date

Appendix D: Research Question Map

RQ	Research Question	Conceptual or Theoretical Framework	Interview Questions
RQ1	**How do biological mothers of newborns make meaning of health?**	Social Marketing (Social Good, Marketing Mix, Behavior Change, Audience)	3. What comes to mind when you think about health? What do you think about when you think about health? *Probe:* Why were these your first thoughts? 4. I want you to think about 12 months ago, before you were pregnant. What were some health issues you thought about back then? & 5. Thinking about today, what are some health issues you are thinking about right now? *Probes:* Why these issues? What is your biggest health concern? If health issues are about baby, then ask "what are some health issues you think about for yourself?"
RQ1.1	How do women define their highest priority health issue, both for themselves and for their newborn?		6. For the rest of the interview, I want to focus on your highest priority health issue. What would you say is your highest priority health issue?
RQ1.2	What motivates women to adopt healthy behaviors and what barriers keep women from adopting healthy behaviors related to their highest priority health issue?	Social Marketing (Behavior Change; Marketing Mix: Price)	11. Please describe for me a time when you adopted a new health behavior? It could be a prescription medicine, a medical treatment, or even the food you eat, or your exercise? *Probes:* Could you tell me about how you made the decision? What factors did you consider? Who did you talk with about this decision? Who was most influential as you made this decision?
RQ1.3	What do women say will help them adopt healthy behaviors related to their highest priority health issue? (e.g., reminders, knowledge, skills, social support)	Social Marketing (Behavior Change; Marketing Mix: Promotion)	15. What information do you most need about [highest priority health issue]? [*If participant did NOT mention any health issues, Probe:* contraception? Nutrition and exercise?] *Probe:* Reminders? Knowledge? Skills, techniques? Social support?
RQ2	**How do biological mothers of newborns identify their health information needs related to their highest priority health issue?**	Social Marketing (Audience; Marketing Mix: Product)	13. What kind of health messages are you most interested in receiving regarding [highest priority health issue]? *Probe:* Health messages about your health? Health messages about your baby's health? 15. What information do you most need about [highest priority health issue]? *Probes:* Reminders, Knowledge, Skills/Techniques, Support

RQ3	**How do biological mothers of newborns make meaning of communication channels regarding their highest priority health issue?**	DOI and Social Marketing	
RQ3.1	How do biological mothers of newborns use communication channels (mass media and interpersonal communication channels) regarding their highest priority health issue?		7. Where do you go for more information about [highest priority health issue]? In other words, what sources of information do you use when you want to learn more about it? *Probe:* How often do you use these sources? *Probe:* Can you offer some examples of any health information you recently found?
RQ3.2	How do biological mothers of newborns perceive their own social systems regarding their highest priority health issue?	DOI (system-level variables)	8. Where do you hear about [highest priority health issue]? *Probes:* Friends? Family? Mother/Aunts? Doctor's office? TV or in magazines? Who is your most trusted source of information about health? Why?
			9. Please describe for me a time when you discussed [*highest priority health issue*] with people in your life? *Probe:* Why did you discuss this?
RQ4	**How do biological mothers of newborns make meaning of current social marketing campaigns targeting their highest priority health issue?**	Social Marketing (Marketing Mix: Promotion); DOI (communication channel behavior)	11. What health campaign messages have you seen or heard about [highest priority health issue]? ? *Probe:* What did you think about those messages?
RQ5	**How can biological mothers of newborns be classified into adopter categories regarding issues of health regarding their highest priority health issue?**	DOI (e.g., adopter categories and innovativeness: cosmopoliteness, communication channel behavior, resources, social status, contact with change agents)	
RQ5.1	How are biological mothers of newborns' socioeconomic characteristics related to their innovativeness regarding their highest priority health issue?	(Age; Formal education; Literacy; self- perceived identification with a social class, etc.)	8. Where do you hear about [highest priority health issue]? *Probes:* Friends? Family? Mother/Aunts? Doctor's office? TV or in magazines? Who is your most trusted source of information about health? Why?
RQ5.2	How are biological mothers of newborns' personality values related to their innovativeness regarding their highest priority health issue?	(Empathy; dogmatism; abstractions; rationality; intelligence; attitudes toward change, uncertainty, risk, science; aspirations; fatalism)	10. Please describe for me your relationship with your [health care provider] that you see on a regular basis? *Probe:* What role does your [health care provider] play in your personal health? *Probe:* Have you ever disagreed with your [health care provider's] advice? What would happen if you disagreed? Probe: What

			does your [health care provider] say about [highest priority health issue]?
RQ5.3	How are biological mothers of newborns' communication behaviors related to their innovativeness regarding their highest priority health issue?	(Social participation; interconnected; cosmopolite; contact with change agents; exposure to mass media, etc.)	13. How would you most like to receive health messages regarding [highest priority health issue]? *If participant doesn't mention the following channels, Probe:* Could you tell me about how, if at all, you would like to use _____ to receive health messages?

Appendix E: Participants' Biographical Profiles

I assigned each participant a pseudonym based on the top 100 names in Rhode Island in 2010, which was the most recent available data from Social Security Online (www.socialsecurity.gov). This website provides the top 100 names by State and year of birth. The source is a 100% sample based on Social Security card application data.

Aaliyah is 25 years old, Black. She lives in Central Falls, RI. She has three children. She completed some high school.

Abigail is 26 years old, Black. She lives in Woonsocket, RI. She has three children. She completed the 11th grade and earned her GED.

Addison is 40 years old, white. She lives in North Kingstown, RI. She has three children. She completed college.

Adriana is 22 years old, white. She lives in Woonsocket, RI. She has one child. She completed college.

Alexa is 34 years old, white. She lives in Cranston, RI. She has two children. She has a PhD.

Allison is 31 years old, white. She lives in Barrington, RI. She has one child. She is a physician.

Alyssa is 26 years old, white. She lives in North Providence, RI. She has one child. She completed high school and is pursuing an Associate's degree.

Amaya is 29 years old, Hispanic. She lives in Providence, RI. She has two children. She completed high school.

Amelia is 27 years old, Asian. She lives in Providence, RI. She has one child. She completed college.

Ariana is 29 years old, white. She lives in Warwick, RI. She has one child. She completed college.

Aubrey is 25 years old, Hispanic. She lives in North Providence, RI. She has two children. She had her first child at the age of 17. She completed high school.

Autumn is 29 years old, white. She lives in Cranston, RI. She has two children. She completed some college.

Ava is 34 years old, Hispanic. She lives in Providence, RI. She has two children. She completed some college.

Camila is 27 years old, white. She lives in Johnston, RI. She has one child. She completed some college.

Caroline is 26 years old, white. She lives in Cranston, RI. She has one child. She completed college.

Destiny is 29 years old, Hispanic. She lives in Pawtucket, RI. She has three children. She completed the ninth grade.

Emma is 26 years old, white. She lives in Warwick, RI. She has three children. She completed high school.

Faith is 40 years old, white. She lives in Riverside, RI. She has four children. She completed some college.

Gia is 35 years old, white. She lives in Newport, RI. She has one child. She completed college.

Gianna is 19 years old, white. She lives in Kingston, RI. She has one child. She has completed some college.

Giuliana is 24 years old, Hispanic. She lives in East Providence, RI. She has one child. She completed high school.

Hannah is 22 years old, Hispanic. She lives in Central Falls, RI. She has four children. She completed the 10th grade.

Isabella is 39 years old, white. She lives in Newport, RI. She has one child. She completed college.

Isla is 35 years old, white. She lives in Central Falls, RI. She has one child. She completed college.

Jasmine is 32 years old, Hispanic. She lives in North Providence, RI. She has two children. She completed high school.

Kaylee is 36 years old, white. She lives in Barrington, RI. She has two children. She completed college.

Khloe is 38 years old, white. She lives in Coventry, RI. She has two children. She completed college.

Lilly is 26 years old, white. She lives in Coventry, RI. She has one child. She completed college.

Mackenzie is 23 years old, white. She lives in Barrington, RI. She has one child. She has completed some college.

Madeline is 30 years old, white. She lives in Scituate, RI. She has two children. She has completed some masters degree.

Maya is 28 years old, Hispanic. She lives in Central Falls, RI. She has four children. She completed high school.

Melanie is 29 years old, white. She lives in Barrington, RI. She has one child. She completed college.

Molly is 26 years old, white. She lives in East Greenwich, RI. She has one child. She has completed part of a Master's degree.

Morgan is 33 years old, white. She lives in Riverside, RI. She has two children. She completed part of a PhD.

Natalia is 28 years old, white. She lives in Bristol, RI. She has one child. She completed some college.

Nevaeh is 35 years old, Black. She lives in Central Falls, RI. She has three children. She completed the 9th grade.

Olivia is 18 years old, white. She lives in Smithfield, RI. She has one child. She completed some college.

Rachel is 21 years old, white. She lives in Woonsocket, RI. She has one child. She completed the 11th grade.

Sabrina is 20 years old, Hispanic. She lives in North Providence, RI. She has one child. She completed the 10th grade.

Sarah is 34 years old, white. She lives in Warwick, RI. She has three children. She completed high school.

Savannah is 29 years old, white. She lives in East Providence RI. She has one child. She is currently in graduate school.

Sophia is 21 years old, Hispanic. She lives in Pawtucket, RI. She has two children. She completed high school.

Stella is 29 years old, Asian. She lives in East Providence, RI. She has one child. She has completed college.

Zoey is 28 years old, Hispanic. She lives in North Providence, RI. She has one child. She completed high school.

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