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PREDICTORS AND OUTCOMES OF THE OCCURRENCE AND VALENCE OF CAMPAIGN-RELATED TALK: THE INTERPLAY BETWEEN NEW MEDIA USE, CONVERSATIONS, AND VICARIOUS LEARNING IN THE CONTEXT OF REPRODUCTIVE HEALTH

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PREDICTORS AND OUTCOMES OF THE OCCURRENCE AND VALENCE OF
CAMPAIGN-RELATED TALK:
THE INTERPLAY BETWEEN NEW MEDIA USE, CONVERSATIONS, AND
VICARIOUS LEARNING IN THE CONTEXT OF REPRODUCTIVE HEALTH

DISSERTATION

A dissertation submitted in partial fulfillment of the
requirements for the degree of Doctor of Philosophy in the
College of Communication and Information
at the University of Kentucky

By
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Lexington, Kentucky
Director: Dr. Donald W. Helme, Professor of Communication
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2022

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ABSTRACT OF DISSERTATION

PREDICTORS AND OUTCOMES OF THE OCCURRENCE AND VALENCE OF CAMPAIGN-RELATED TALK: THE INTERPLAY BETWEEN NEW MEDIA USE, CONVERSATIONS, AND VICARIOUS LEARNING IN THE CONTEXT OF REPRODUCTIVE HEALTH

Study 1 explored the dominant or deciding barriers and facilitators, beyond environmental and systemic factors, influencing women's LARC uptake (RQ1, RQ2). Moreover, it examined pregnancy ambivalence and motivation to prevent unintended pregnancy as distal variables to LARC information seeking and uptake (H1, H3). Additionally, it examined embodied experience as an important source of information about contraception (H4). Furthermore, it explored how informal and formal sources support reproductive health decision-making, specifically focusing on social networks as sources of information, knowledge (RQ3, H2), and norms regarding LARC uptake (RQ4, RQ4a, RQ5). Study 2 examined the influence of social learning and LARC knowledge in the evaluation of campaign messages (RQ6) and tested whether such evaluations influence the generation (RQ7) and diffusion (H5) of campaign influence. Finally, it examined how exposure to negative or positive online LARC talk influences intentions to seek information (H6) and adopt LARC (H7).

In study 1, findings suggest that increasing the pervasiveness of LARC information, experiential or not, may facilitate women's familiarity and comfort with this method. Moreover, familiarity and comfort with LARC methods may help translate knowledge to interest, and potentially subsequent use. Additionally, the findings from study 2 concur with previous studies consistent with DOI, in that increased exposure to a campaign can prompt participants to initiate discussions about LARC with friends, which then serve as the potential initial step toward adopting a LARC. In sum, this dissertation contributes to the theoretical and practical understanding of women's perceptions and use of new media, mass media, and interpersonal communication channels in relation to contraceptive decision-making.

KEYWORDS: Masspersonal Communication, Campaign Effects, Social Influence.

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04/05/2022

Date

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DEDICATION

Mom, we did it!

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CHAPTER 1. INTRODUCTION & RATIONALE

Unintended pregnancy is defined as a pregnancy that is either unwanted or mistimed and is often related to women's unmet need for consistent and effective contraceptive methods (Hayford & Guzzo, 2016). Unintended pregnancy in the United States is a stubborn problem. To illustrate, approximately 48% of women who experience an unintended pregnancy report using some form of contraception in the month of conception (Mosher et al., 2016). Moreover, Finer and Zolna (2016) reported national trends of unintended pregnancies and discovered that in 2011, 45% of pregnancies in the U.S. were unintended.

Two major results from the Finer and Zolna (2016) report should be highlighted. First, disparities in reproductive health are still very present: despite increased access to highly effective contraceptive options, the rates of unintended pregnancy among women who were below poverty level were two to three times the national average. These results have been corroborated by other studies as well (Hayford & Guzzo, 2016; Maslyanskaya et al., 2016).

Second, women between the ages of 18 and 24-years-old experience the highest incidence of unintended pregnancy compared to other age groups (Finer & Zolna, 2016). This disparity is due in part to the likelihood of women in this age group to use less effective contraceptive methods or no method at all (Frost & Lindberg, 2013; Nearn, 2009). Similarly, evidence suggests that women in this age group have the highest rates of contraceptive failure, misuse, and discontinuation (Lunde et al., 2017; Maslyanskaya et al., 2016; Romero et al., 2015). Moreover, in their 50-year-long longitudinal analysis, Hayford and Guzzo (2016) described major disparities in access and use of contraceptive methods

among this population; outlining that college students are at a unique risk for adverse sexual and reproductive health outcomes, including unintended pregnancy and STIs, due to their high rates of risky sexual behavior, such as inconsistent condom use, misuse of contraception, and multiple partners.

Despite a near-continuous decline over the past 20 years, the unintended birth rate in the United States continues to be 6 to 12 times that of other developed countries (Birgisson et al., 2015; Finer & Zolna, 2016). Nevertheless, there is some evidence showing that the rates of unintended births have declined in recent years due to the renewed emphasis on the distribution of long-acting reversible contraceptives (LARC; Parks & Peipert, 2016) and more affordable access to contraception under the Affordable Care Act (Pritt et al., 2017). Data from epidemiological studies concurs that the recent decline of unintended pregnancies in the last decade is primarily attributable to improved contraceptive use (Finer & Zolna, 2016; Hayford & Guzzo, 2016; Mosher et al., 2016). For example, in the most up to date report as of 2022, Finer and Zolna (2016) found that decreased sexual activity was responsible for 23% of the decline among young women and the remaining 77% was due to increased contraceptive use, including the use of many individual methods, multiple methods, and substantial declines in nonuse.

Although there are many other methods of preventing pregnancy (e.g., abstinence, natural family planning, withdrawal, etc.), this dissertation will focus on young women's use of effective long-lasting contraception (i.e., LARC). A focus on LARC is justified based on previous findings that an increase in use of reversible, non-user dependent, long acting, and highly effective methods, such as LARC, can reduce the rate of unintended

pregnancy among young women (Lindo & Packham, 2017; Stoddard et al., 2011; Wu et al., 2018; Wu & Pickle, 2014).

The promotion of LARC use among young adult women deserves attention because the incidence of unintended pregnancy can be a key indicator of a population's reproductive health (Price & Hawkins, 2007). For example, the rates of unintended pregnancy may indicate the extent to which women have access to knowledge and services that aid them in freely determining whether and when they have children (Fuentes et al., 2018; Romero et al., 2015). Furthermore, the ability to plan if and when to have children is fundamental to the health of women since there is vast evidence demonstrating the adverse effects of unintended pregnancy on a woman's life; including their socioeconomic status (Taylor et al., 2010), educational attainment (Hayford & Guzzo, 2016), and adverse physical and mental health outcomes (Trussell et al., 2013) that last long after pregnancy. Moreover, women with unintended pregnancy that are continued to term are more likely to receive inadequate prenatal care (Ahrens et al., 2018) and have poorer health outcomes, such as infant low birthweight, infant mortality (Zuckerman et al., 2014), and maternal mortality and morbidity (Dehlendorf, Ruskin, Darney, et al., 2010).

However, despite its frequency and significant costs, unintended pregnancy has received less attention in both research and development of clinical and preventative care strategies than other similarly important health threats (Taylor et al., 2010; Trussell et al., 2013). This oversight can be attributed to the fragmentation of health care services and the politicization of reproductive health, particularly access to contraception and abortion (Campo et al., 2010; Hall, 2012; Taylor et al., 2010).

1.1 Unintended Pregnancy and Patterns of Contraceptive Use

Contraceptive behavior, one form of family planning, is defined by Ott et al. (2014) as activities involved in the process of identifying and using a contraceptive method to prevent pregnancy and can include specific actions, such as contraceptive initiation (i.e., to begin using a contraceptive method), continuation or discontinuation (i.e., to maintain or stop use of a contraceptive method), misuse (i.e., interrupted, omitted or mistimed use of a contraceptive method), nonuse, and more broadly, compliance and adherence. As for current contraceptive behaviors among U.S. young adult women, Daniels et al. (2015) found that the contraceptive methods most commonly used are the oral contraceptive pill and the male condom. Given those results, a rationale for this dissertation is to further investigate why the most common contraceptive methods chosen by women are not the best or most effective options for preventing unintended pregnancy.

To elaborate, the oral contraceptive pills, which are the most popular contraceptive choice among women of all ages, have a typical-use failure rate of 9% (Sundstrom, 2012). Additionally, they must be taken daily, making strict adherence a key component of oral contraceptive pill use (S. B. Rose & Lawton, 2012). Moreover, although the male condom (which is the second most common method) is the best mechanical barrier for STI prevention, the failure rate is 18% for typical users, making it one of the least effective methods of contraception (Mansour, 2014).

In response to the failure rates and required daily mechanisms of the birth control pills and condoms, experts recommend the use of long-acting reversible contraception (LARC) instead (Dehlendorf et al., 2011; Lindo & Packham, 2017; Mestad et al., 2011). LARC methods are inserted into the uterus (for the IUD) or into the inside of the

nondominant upper arm (for the progestin implant) to provide long-acting reversible contraception (Hillard, 2013). The IUD and progestin implant are generally safe and effective methods with a failure rate of less than 1% and may remain in place between 3 to 10 years. However, regardless of its benefits, LARC use among US women remains less prevalent than in other developed countries (Eeckhaut et al., 2021). This is despite most recent data presenting a sevenfold increase in LARC use since 2002, when only 1.5% of women used IUDs and implants (Daniels et al., 2015).

1.2 The Social Context of Reproductive Health

Ever since the goal of reducing unintended pregnancies was added to the *Healthy People* initiative in the 1980s, arguments for, and research on, LARC access and adoption have centered on LARCs' high efficacy and potential to reduce unintended pregnancy (Lindo & Packham, 2017; Secura et al., 2014). As a result, the measures and objectives created to reach this goal have often focused solely on increasing access to contraception (N. Kumar & Brown, 2016; Rubin et al., 2013; Sundstrom et al., 2016). However, although increasing access to contraception is vitally important, it does not address the problem of unintended pregnancy in a holistic and comprehensive manner.

It is imperative to also acknowledge that decisions about childbearing occur in a social and economic context (Dehlendorf et al., 2010). Therefore, recognizing the personal (Kusunoki & Upchurch, 2011), historical (Gilliam et al., 2011), economic (Price & Hawkins, 2007), and cultural (Aalsma et al., 2013) contexts in which contraceptive decision making occur is indispensable in promoting reproductive health for all women. Not to mention, family planning and reproductive health encompass unique social and cultural issues surrounding sexuality (Gilliam et al., 2011; Roncancio et al., 2012), attitudes

toward pregnancy (Geist et al., 2019; Higgins, 2017), norms surrounding sexual intercourse (Frost et al., 2012; Sedlander & Rimal, 2019), beliefs about contraception and abortion (Gomez et al., 2019), and multiple other factors that result in added complexity (Dehlendorf et al., 2013; Downey et al., 2017; Judge & Borrero, 2017).

Taking social factors into consideration, Price and Hawkins (2007) proposed a conceptual framework for the social analysis of reproductive health in which contraceptive decision-making is embedded in social, political, and institutional relations that operate from the macro level (e.g., health systems, political structures, religious affiliations, etc.) to the micro level (e.g., kinship groups, peer networks, gender roles, economic role, etc.). Under those circumstances, Price and Hawkins (2007) identified three major factors that contribute to disparities in unintended pregnancy: 1) women's preferences and behaviors, 2) health care system factors, and 3) provider-related factors. Exploring how these social forces influence contraceptive behaviors is imperative to identifying strategies for promoting healthy reproductive behaviors, which in turn will reduce unintended pregnancy among young women.

A wide-ranging body of theoretical and empirical studies on safe sex and reproductive health behaviors have established intrapersonal influences such as attitudes and beliefs to be related to contraceptive behaviors (Bachorik et al., 2015; Payne et al., 2016). However, there has been less empirical interest in studying the social aspects of contraceptive decision-making. Regardless, there is empirical support for the notion that contraceptive decision making also happens in an interpersonal context, either with romantic partners (Manlove et al., 2007, 2011, 2014), peers (Anderson et al., 2014; Valente

et al., 1997; Valente, 2001), family members (Koren, 2019; Marcellus, 2003), or healthcare providers (Higgins et al., 2016; Tyler et al., 2012).

Similarly, although most of the literature on reproductive health focuses on health care providers and health educators as influences and sources of information about contraceptives (Donnelly et al., 2014; Fuzzell et al., 2017), the reality is that health professionals are competing among other powerful influences such as friends, family, the Internet, and new media (Blackstock et al., 2010; Ghaddar et al., 2012; Guthrie & Bates, 2003; R. K. Jones et al., 2011; Khurana & Bleakley, 2015; Kwan et al., 2010; Lindberg et al., 2016; Maccowall et al., 2015; Vader et al., 2011).

It is necessary to explore and examine interpersonal variables that affect the contraceptive choices of young women to further understand the dynamics of reproductive decision-making. Therefore, this dissertation reviews and tests the complex and multifaceted ways in which intrapersonal *and* interpersonal factors interact in women's contraceptive choices. Overall, this dissertation strives to understand the role that communication plays in the context of contraceptive behaviors; specifically, how informal and formal sources of information can support women in their reproductive health decision-making, focusing on social networks (both in person or in online communities) as sources of information and norms regarding LARC uptake.

Previous campaign research has shown that whether people talk about the campaign topic or not influences health campaign effects (Brennan et al., 2016; Dunlop, 2011; Jeong et al., 2015). However, limited evidence exists on whether conversational valence fulfills a mediating role within health campaign effects (Hendriks et al., 2012; Hendriks, van den Putte, & de Bruijn, 2014; Hendriks et al., 2015, 2021; Mesman et al., 2021). Furthermore,

previous studies have documented that women value embodied experience as an important source of information about contraception (Benson et al., 2012; Madden et al., 2013). However, the science behind the role of information based on others' experiences is epistemologically complex and methodologically diverse (Boyd et al., 2011; Cox et al., 1999; Gioia & Manz, 2022; Perry et al., 1990; Potvin et al., 2005; Pratt et al., 2010; Rosenstock et al., 1988; Terlaak & Gong, 2008).

A current gap in the campaign effect literature revolves around previous studies mostly investigating the moderating and mediating roles of campaign talk by using correlational survey designs (Hardy & Scheufele, 2005; Jeong & Bae, 2018). In response, this dissertation sought not just replicate these studies in a LARC context but to provide an integrative understanding of the possible mediating role of campaign talk on campaign influence and the moderating role of message evaluation on willingness to engage in such conversations.

1.3 Social Influence and New Media Channels

It is widely known that people go online to access health information (von Rosen et al., 2017). Studies looking at information seeking behaviors and sources of reproductive health information have found that one of the most common sources of reproductive health information for young adults is the Internet, especially new media channels (R. K. Jones & Biddlecom, 2011b, 2011a; Khurana & Bleakley, 2015; Russo, Parisi, et al., 2013). The term new media is a broad term that refers to on-demand access to content anytime, anywhere, on any digital device, as well as interactive user feedback, creative participation, and community formation around the media content (Walther, 2017).

New media such as the internet, mobile health technologies, and applications (apps), present an opportunity to improve access and provision to comprehensive reproductive health information (Allison et al., 2012; Levine, 2011; Wadham et al., 2019). Due to the Internet's popularity and the vast number of online sources of health information available, the intersection of young adults, reproductive health, and the internet has been the subject of many research studies (Allison et al., 2012; Gabarron et al., 2018; Guse et al., 2012; Ito & Brown, 2010; Khawaja et al., 2017; Levitz et al., 2018; Silberman & Record, 2021; Wadham et al., 2019; Webb et al., 2010).

Previous studies have found that, contrary to previous beliefs, in terms of health promotion, the Internet and new media are not an end for young people (Chau et al., 2018; Guse et al., 2012; Hsu et al., 2018; Krebs et al., 2010; Levitz et al., 2018; Maher et al., 2014; Mustanski et al., 2015; Noar, 2011; Noar et al., 2010; Ridout & Campbell, 2018; Silberman & Record, 2021; Wadham et al., 2019; Webb et al., 2010). In general, the Internet can provide gateways and links to sources of information about effective preventive services and healthcare (R. K. Jones & Biddlecom, 2011b; von Rosen et al., 2017; Ziebland & Wyke, 2012). It can also serve as a tool for online social support, where users can seek advice and reassurance on sensitive topics without hesitation thanks to the anonymity the Internet can provide (Tebb et al., 2019; S. E. Timmons et al., 2018). The Internet also allows users with low-cost access to health information without having to speak to a provider face-to-face (Sridhar et al., 2015; Yager & O'Keefe, 2012). Additionally, online health communication channels offer the opportunity to preserve and review health messages, which can enhance comprehension and retention of health

information and enable interpersonal feedback, which can reduce the equivocal nature of health situations (Ghaddar et al., 2012; Tebb et al., 2019).

1.4 Dissertation Aims

As seen, the etiologies behind unintended pregnancy are embedded in a complex historical, cultural, and social framework. Additionally, social communication about contraception is common, with most women reporting discussing contraception with female friends at least once (Ali et al., 2011a; Kohler, 1997). Hence, the role of women's social context on contraceptive behavior has been gaining academic traction for the past few years (Higgins et al., 2015; Sedlander & Rimal, 2019; L. Yee & Simon, 2010).

The motivation for this dissertation comes from accumulated evidence that the consideration of adopting LARC as contraceptive methods may be an innovation that diffuses, either from a central source such as health campaign messages or through interpersonal contacts (Anderson et al., 2014; Pace et al., 2016; Valente et al., 1997; W. Valente, 2001). Past studies that have conceptualized contraceptive methods as innovations employed diffusion models to examine the adoption rates of contraceptive methods (Valente et al., 1997; Valente & Saba, 1998). Other studies have drawn on network theories instead, which assume that who talks with whom is important, and therefore have focused on measuring the interpersonal communication structure of a community (Kincaid, 2000; Madden et al., 2013; L. Yee & Simon, 2010). This dissertation draws from both approaches. First, a social networks approach is used to explore the different social sources of contraceptive information as well as network's influence on contraceptive social norms and subsequent contraceptive behaviors (Study 1). Second, a diffusions perspective is used

to explore the factors that influence women to engage in contraceptive conversations and diffuse contraceptive campaign messages with others (Study 2).

More specifically, this dissertation tests whether campaign talk can be another avenue in which campaigns influence a person's health perceptions or behaviors. By examining the predictors and outcomes of campaign-related talk, this dissertation sheds light on the interplay between health campaigns, interpersonal influence, and the social diffusion of campaign messages on the promotion of reproductive health perceptions and behaviors. Thus, the aims driving this dissertation are:

Aim #1: To further understand contraceptive decision-making and interest in LARC uptake, the first aim of this dissertation is to:

1. Identify young women's attitudes, perceived social norms, self-efficacy, awareness, and intention, specifically, toward LARC uptake.
2. Explore participants' levels of LARC knowledge.
3. Examine differences across various demographic characteristics and proximal variables to LARC uptake.

Aim #2: To explore determinants that may influence women's willingness to engage in LARC talk with others after campaign exposure, the second aim of this dissertation is to:

1. Explore how contraceptive history, motivation to prevent unintended pregnancy, awareness of others' LARC experiences, and knowledge levels influence campaign message evaluation.
2. Hypothesize and test the role of campaign message evaluation on willingness to engage in LARC talk.

3. Examine how contraceptive history, motivation to prevent unintended pregnancy, awareness of others' LARC experiences, and knowledge levels influence the valence of intended LARC talk.

Aim #3: To test the social diffusion model of campaign influence with the added construct of conversational valence in the context of LARC uptake, the third aim of this dissertation is to:

1. Explore if LARC talk influences behavioral intentions to adopt LARC through attitudes, perceived norms, and self-efficacy.
2. Examine if the occurrence and valence of LARC talk mediate the relationship between initial interest in LARC uptake and (a) future information seeking behaviors and (b) behavioral intentions to adopt LARC.

1.5 Organization

The **first chapter** of this dissertation provided an introduction to, and rationale for, the exploration of intrapersonal and interpersonal variables that may influence the contraceptive choices of young women after campaign message exposure. The **second chapter** reviews extant literature on the individual, social network, and community level factors that influence contraceptive choices, including informal and formal sources with a special focus on social networks as sources of information and norms regarding contraceptive behavior. Study 1 is then presented, followed by results and a preliminary discussion and implications of the study. The **third chapter** starts with an overview of the interplay between health campaign messages and interpersonal communication, specifically how campaign-related talk on new media channels can affect health behaviors via social norms. Study 2 is then presented, followed by a proposal and testing of a

conceptual model of campaign social influence inspired by social diffusion models, bridging mass and interpersonal communication by focusing on new media channels as mediums for campaign-related talk. Chapter three ends with an overview of the methodology, analysis, and results, as well as a preliminary discussion and implications of the study. The **fourth chapter** provides a general discussion across both studies as well as practical and theoretical implications, limitations, and future directions. Finally, the **fifth chapter** offers a conclusion of the present studies.

CHAPTER 2. STUDY 1 – UNINTENDED PREGNANCY PREVENTION: A HEALTH COMMUNICATION PERSPECTIVE

Despite Daniels and Jones (2013) reporting that most sexually active women (99%) have experience using contraception, unintended pregnancy among young adults in the USA is substantial. Previous studies concur that despite the circumstances around contraceptive experience, contraceptive use among this population remains inconsistent. For instance, national survey data indicates that around 11% of women who are at risk of unintended pregnancy are not using any form of contraception (Daniels et al., 2015; Kramer et al., 2018; J. Wu et al., 2008). Furthermore, data from the American College Health Association specify that while 47% of college students reported having had vaginal sex in the 30 days, only half (52%) of them used contraception during their last intercourse (Walsh-Buhi & Helmy, 2018).

Although there are many individual and systemic factors that can inhibit or facilitate an individual's use of contraception, Costenbader et al. (2017) argue we must acknowledge that reproductive behaviors are affected by one's sexual partners, social network, and other relationship or contextual factors. Moreover, factors associated with inconsistent, or non-use of contraception are multidimensional and intersecting (Daniels et al., 2015; Davies et al., 2006; J. Jones et al., 2012; Manlove et al., 2007, 2011; Roncancio et al., 2012; J. G. Rose et al., 2008; Stern et al., 2015; A. L. White et al., 2018). Thus, based on previous work, it is important to delineate three major factors that contribute to the high rates of unintended pregnancies in the United States: health care system factors, patient-provider related factors, and individual level factors.

First, there are health care system factors such as access to family planning services and publicly funded contraception that limit the use of effective prescription contraception (Nearn, 2009; Svanemyr et al., 2015). Second, healthcare providers play a crucial role in contraception by educating and counseling patients about different forms of birth control (Philliber et al., 2014), writing prescriptions and inserting and removing contraceptive devices (Higgins et al., 2016), and helping patients manage adverse reactions (Tyler et al., 2012). Third, women have unique preferences and behaviors towards contraception. Previous studies exploring attitudes and contraceptive behaviors in young adults have found contraceptive behaviors to be associated with moral attitudes about contraception, ambivalence about getting pregnant, and motivation to prevent unintended pregnancy (Burns et al., 2015; Gomez & Freihart, 2017; Wyatt et al., 2014).

Considering how societal and individual factors can influence contraceptive choices among women, it is imperative to conduct health communication scholarship based on an ecological framework of reproductive behaviors and outcomes. Thus, this study is rooted in three guiding principles of the ecological framework by 1) recognizing the multiple influences on health behaviors and outcomes that operate at the intrapersonal, interpersonal, organizational, community, and public policy levels; 2) acknowledging that these influences interact across these different levels, and 3) by focusing on specific health behaviors and outcomes which will identify which factors are most likely to influence the specific behavior or outcome at each level of the framework (Price & Hawkins, 2007). A review of theoretical and empirical reproductive health communication literature as it relates to LARC uptake follows.

2.1 Promoting LARC to Reduce Unintended Pregnancy

Currently, there are various national and regional contraceptive access campaigns aimed at preventing unintended pregnancy by increasing access to family planning resources. For instance, several state initiatives, such as the Colorado Family Planning Initiative (CFPI) (Ricketts et al., 2014), the HER Salt Lake Contraceptive Initiative in Utah (Simmons et al., 2019), and the Delaware Contraceptive Access Now (DEL-CAN) initiative (Sundstrom et al., 2016), are trying to specifically increase LARC use among adolescent and young adult women. Furthermore, regardless of these initiatives and the fact that LARC are particularly advantageous for young women because they are safe, 99% effective, do not require daily adherence or frequent doctor visits for refills, and are highly cost-effective its benefits, LARC use among US women remains less prevalent than in other developed countries (Eeckhaut et al., 2021).

Researchers have identified this resistance as the “paradox of inertia”, which identifies the phenomenon of acknowledging LARC as a superior choice and perceiving significant disadvantages in non-LARC methods yet resisting to switch to a LARC method (DeMaria et al., 2019). To add to the complexity of women’s contraceptive choices, promoting behavior change (e.g., LARC uptake) via communication strategies can become an enormous challenge, as several constructs such as the preexisting knowledge (Frost et al., 2012; Spies et al., 2010), beliefs (Mansour, 2014; J. E. Potter et al., 2014), values (Aalsma et al., 2013; Gilliam et al., 2011), and motivations (Geist et al., 2019; Gomez & Freihart, 2017) play a factor in the willingness to attend to and process messages regarding the behavior.

In response to this challenge, several scholars have attempted to offer potential explanations for the low rate of LARC use among US adolescents and young women (Kilfoyle et al., 2016; Wyatt et al., 2014). Findings show that, in particular, there are seven key factors that most influence young women contraceptive decisions, particularly pertaining to LARC uptake: 1) environmental barriers and facilitators of method adoption (K. Black et al., 2012; D. Eisenberg et al., 2013; N. Kumar & Brown, 2016; Pritt et al., 2017), 2) preferences for method specific characteristics (Jackson et al., 2016; Marshall et al., 2016; Walker et al., 2019; Weisberg et al., 2013), 3) attitudes toward contraception and pregnancy (Craig et al., 2014; Frost et al., 2012; Rose et al., 2008; Sangi-Haghpeykar et al., 2006; Suellentrop & Frost, 2009), 4) informational gaps (Alzate et al., 2020; Kilfoyle et al., 2016; Vamos et al., 2020; Yee & Simon, 2014), 5) social context (Ali et al., 2011b; Aral, 1999; Edney et al., 2019; B. C. Kelly et al., 2012; Schouten et al., 2007), 6) anecdotes from social references (Marcellus, 2003; Meier et al., 2021; Perry et al., 1990; W. Valente, 2001; Widman et al., 2006), and 7) normative influences (Dessie et al., 2015; Matera et al., 2018; Schouten et al., 2007; Tschann et al., 2017).

2.1.1 Environmental Barriers and Facilitators

One of the most significant barriers to LARC uptake is the up-front cost for the device and its insertion, which for uninsured women it can be over \$1000 (Coates et al., 2018; N. Kumar & Brown, 2016). However, since the Affordable Care Act (ACA) in 2010, health plans are now required to include contraceptive services, which removes an important barrier for low-income women.

Studies have estimated that providing full contraceptive coverage in the United States can reduce unintended pregnancies by 17%, with a magnified effect on low-income

women of an estimated 28% reduction (Birgisson et al., 2015; Peipert et al., 2010). In fact, results from the Contraceptive CHOICE Project (Secura et al., 2010) demonstrate the potential for greater LARC uptake in the United States when: 1) financial barriers are removed; 2) women are made aware of these methods alongside their risks and benefits, and; 3) when these methods are offered as first-line contraceptive options. To illustrate, after the aforementioned barriers were removed, among the 9,256 women who enrolled in the CHOICE project and were willing to start a new contraceptive method, 75% chose a LARC method at the time of enrollment.

Health care providers' knowledge and attitudes can be barriers to including LARC methods in the full range of methods available to nulliparous women during contraceptive counseling as several providers lack adequate training in IUD and implant insertion (Higgins et al., 2016). In fact, Tyler et al. (2012) found that only 69% of the providers surveyed reported being trained in IUD insertions. Moreover, 61% of providers had IUDs available at their practice, however, only 40% felt "very comfortable" inserting an IUD. Additionally, besides lacking training in LARC insertion, many providers continue to recommend against the use of LARC for nulliparous women due to concerns about potential infertility related to tubal damage from PID or ectopic pregnancy (Philliber et al., 2014). However, there is good evidence that infertility is related to a history of STIs, not LARC use and there is no evidence that women who use LARC methods are more likely to be exposed to STIs or engage in high- risk sexual behavior compared to other women (Wu et al., 2018).

2.1.2 Individual Preferences for Specific Contraception

For women to initiate and continue using contraceptives, methods must align with their social, relational, sexual, and fertility goals (Dehlendorf et al., 2013). As seen with LARC uptake levels, even though LARC are superior in their contraceptive efficacy they may not be a first-line consideration for what many women need or desire most. In fact, Downey et al. (2017) found that the preference of choosing a highly effective contraceptive method was not associated with the use of more effective methods. Demonstrating that regardless of contraceptive efficacy being highly valued by women (Marshall et al., 2016), it is usually not the only factor that drives contraceptive decision making and may not be a woman's highest priority (Fulcher et al., 2021).

Namely, some women may desire a very effective method, but do not want a method placed inside their bodies, as is the case of intrauterine devices (Payne et al., 2016; J. Potter et al., 2014). Other considerations in choosing a contraceptive method may include desire for menstrual control or menstrual suppression (Hoggart & Newton, 2013; Lara-Torre et al., 2011), desire for acne treatment (Gomez et al., 2019; Lara-Torre et al., 2011), need for discretion (Gomez et al., 2019; Wong et al., 2009), tolerance of adverse effects (Danielle et al., 2013; Lunde et al., 2017; Teal & Sheeder, 2012), and convenience (Gomez & Clark, 2014; Lessard et al., 2012; Madden et al., 2015). Additionally, although the word 'reversible' in LARC is used as a positive attribute, Coombe et al. (2016) found that women in their study felt the word 'reversible' implied a lack of control over when and where to stop their chosen method (i.e., they would need to rely on someone to 'reverse' it for them). Similarly, Rose et al. (2008) found that women wanted to be "in control" by taking "the pill" every day.

Not all attitudes toward LARC's characteristics are negative. Past studies have found that women identify several benefits to LARC use, especially surrounding its high efficacy, potential length of use, and lack of user-dependency after insertion (Burns et al., 2015; Dempsey et al., 2012). Other perceived benefits include the ability to use a LARC confidentially (Kavanaugh et al., 2013; Usinger et al., 2016) and the ability to have sex without using a condom (Sundstrom, 2014; Walsh-Buhi & Helmy, 2018).

These findings concur in that young women's contraceptive decision-making is an iterative, relational, and reflective journey (Downey et al., 2017; Marshall et al., 2016; Melo et al., 2015). Furthermore, these studies demonstrate how challenging it can be to identify one dominant or deciding factor influencing women's contraceptive decisions. Therefore, to better understand why some women are apprehensive toward LARC, specifically around device characteristics, the following research question is proposed:

RQ1: For non-LARC users, what characteristics of LARC are most reported as a) facilitators and b) barriers to LARC uptake?

As discussed, women's perceptions of method safety, efficacy, and associated health effects can influence method uptake. Furthermore, it is also imperative to examine contraception satisfaction and continuation rates as factors of unintended pregnancy levels. Particularly because after women discontinue their contraceptive method, they tend to choose less-effective methods or no method at all, thereby increasing the likelihood of unplanned pregnancy (Lunde et al., 2017; Maslyanskaya et al., 2016). Interestingly, Lunde et al. (2017) reported that women's explanations for changing contraception are overwhelmingly related to non-contraceptive effects (i.e., effects related to using contraception that are unrelated to pregnancy prevention). Unwanted non-contraceptive

effects include irregular, heavy or breakthrough bleeding, weight gain, mood changes, loss of libido, and skin-related issues. As for LARC satisfaction and continuation rates, (R. L. Wright et al., 2012) found that greater expectation of negative side effects was associated with reduced use of hormonal or LARC methods. Notably, when asked about what side-effects were worrisome to them, the side effects participants mentioned were either rare or not even possible.

Although side-effects have received significant attention within contraceptive literature (Gomez et al., 2019; Hoggart & Newton, 2013; Lara-Torre et al., 2011), fewer studies delve into women's perspectives of why and how side-effects are important (Commendador, 2007; Donnelly et al., 2014; Gomez et al., 2019; Marshall et al., 2016). Therefore, to explore what side-effects are perceived as barriers to LARC uptake, the following research question is proposed:

RQ2: For non-LARC users, what side effects are most reported as detrimental to LARC uptake?

2.1.3 Attitudes Toward Contraception and Pregnancy

A notable gap in our understanding of young women's contraceptive use is the role that psychosocial and relational variables play in shaping women's attitudes towards contraceptives (Geist et al., 2019; Newton & Hoggart, 2015; Sundstrom et al., 2017). The lack of nuance in this area may be due to pregnancy intentions and attitudes being multifaceted constructs that are influenced by sociocultural environment (Garbers et al., 2013), relationship expectations (Manlove et al., 2007, 2011, 2014), beliefs about gender roles (R. Evans et al., 2020; KAPUNGU et al., 2010; Medley-Rath & Simonds, 2010; L. Yee & Simon, 2010), and the advantages of childbearing (Sittig et al., 2020); making it

complex for some studies to measure the breadth and depth of these constructs. Moreover, much of the current research around contraceptive uptake assumes a logical model of decision-making and implicitly privileges planned pregnancies (Marshall et al., 2016; Pazol et al., 2015). Scholarship that moves beyond these assumptions reveals the complexities of family planning decision-making, including the many layers of personal preferences regarding whether to use an IUD, implant, or any other contraceptive method (Downey et al., 2017, 2017; Gomez et al., 2014, 2018, 2019; Gomez & Freihart, 2017; Gomez & Wapman, 2017).

Frost et al. (2012) demonstrated the importance of attitudes when they controlled for respondents' background characteristics in regression models assessing contraceptive behavior and found that objective knowledge, attitudes toward contraception and pregnancy, and social norms were typically the most important domains. Higgins (2017) posits that another individual-level factor that may contribute to unintended pregnancy is motivation to avoid unintended pregnancy, which is defined by the levels of ambivalence toward pregnancy. Women who report high ambivalence about pregnancy are less likely to use effective contraception (Higgins, 2017; Sundstrom et al., 2017). Moreover, ambivalence toward pregnancy varies as women vary in their approach to planning childbirth; some women plan births around financial or family circumstances (Wyatt et al., 2014), while others are open to having children as they come (Sittig et al., 2020). Additionally, because young adults are no longer adolescents, but are not necessarily settled into long-term relationships, they are more likely than other age-groups to experience pregnancy ambivalence (Higgins, 2017).

Prevention of unintended pregnancy requires women not only to have access to the means for contraception, but also to have the desire to limit childbearing until actively sought for (Marshall et al., 2018). This is to say that, when studying contraceptive behaviors, it is important to note the level of motivation women may have to prevent pregnancy at that moment in their lives. Thus, the following hypothesis is proposed:

H1: Motivation to prevent unintended pregnancy will be positively associated with LARC use.

2.1.4 Informational Gaps

Besides psychosocial and relational variables, the concerns women have about contraception may result from a lack of knowledge about birth control and reproductive health (Bachorik et al., 2015; Barrett et al., 2012; Hauck & Costescu, 2015; Johnson et al., 2007; Whitaker et al., 2008). Contraceptive knowledge falls under the umbrella of health literacy, which is defined by Yee and Simon (2014) as the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions. As such, Eisenberg et al. (2012) defines contraceptive knowledge as the information needed to make informed decisions about contraception and to effectively use the selected contraceptive method. Since knowledge about contraception, safe sex practices, healthy pregnancy, postpartum behaviors, and preventive care are necessary to maintain optimal reproductive and overall health, women's health literacy levels are likely to impact overall reproductive health (Alzate et al., 2020; Kilfoyle et al., 2016; L. M. Yee & Simon, 2014). For instance, Yee and Simon (2014) found that women who have limited knowledge about reproductive health and

contraception struggle to differentiate between different methods in terms of effectiveness and mechanisms to prevent pregnancy.

To illustrate the interplay between knowledge levels and LARC uptake, let us discuss the Greater Rochester LARC Initiative, which was launched in 2014 in Rochester, NY (Aligne et al., 2020). This intervention disseminated accurate information about contraceptive options with a focus on LARC methods by delivering interactive lunch-and-learn talks to adults who work with teens in both youth-serving community-based organizations and in medical settings. Their findings showed great success; between 2013 and 2017, LARC use in Rochester rose from 4% to 24% in sexually active female high school students. This finding is consistent with previous interventions that have demonstrated how young women will choose LARC if they are given accurate information about all the various contraceptive methods available. Thus, given extensive research on the impact of health literacy in health behaviors and the need to assess the influence of contraceptive knowledge on LARC, the following research question and hypothesis are proposed:

RQ3: Do LARC knowledge levels differ between LARC users and non-LARC users?

H2: For non-LARC users, higher knowledge levels will be positively associated with a) positive attitudes toward LARC, b) higher self-efficacy surrounding LARC uptake, and c) behavioral intentions to adopt LARC.

In their exploratory study, Jones et al. (2011) found that although many young women had been exposed to safe sex mantras from a variety of sources, relatively few of them had been exposed to substantive information about safer sex and contraception.

Contraceptive information was generally limited to the side effects of hormonal methods for the purposes of pregnancy prevention and regulating menstruation. Similarly, Russo et al. (2013) discovered that college-aged women are often exposed to misinformation and misconceptions about contraception use. Hence, given the inconsistencies in the relaying of sexual and reproductive health information it also remains unclear as to where else teenagers and young adults go to seek sexual health information.

Previous studies argue that no one source can be considered the most important or dominant as it relates to sexual and reproductive health (Bleakley et al., 2009; Jones et al., 2011; Lim et al., 2014). Results from a national survey revealed that teenagers and young adults learn about sexual and reproductive health from sex education classes (77%), friends (76%), parents (75%), media such as TV shows, movies, magazines, and the Internet (70%), romantic partners (50%), and health care providers (51%) (Khurana & Bleakley, 2015; Macdowall et al., 2015). As for sources of information about LARC methods, a study by Byker et al. (2019) found that women had heard of LARC from a healthcare provider (30%), friends (16%), and family members (10%). Lim et al. (2014) found that women who reported hearing of LARC stated it was from a healthcare professional source (70%), the media (56%), peers (32%), and family (21%).

Moreover, in terms of information-seeking behaviors, Russo et al. (2013) found that, after visiting a primary care provider, women who received contraceptive prescriptions were more likely to seek additional information about their prescription than women who received noncontraceptive prescriptions. Furthermore, women were more likely to utilize the Internet and package insert for information about contraceptive medications than they were for information about noncontraceptive medications.

By identifying the common sources of LARC information, past programs and interventions have utilized these channels to diffuse information about LARC (Garrett et al., 2016; R. K. Jones & Biddlecom, 2011b; Khurana & Bleakley, 2015). Additionally, scholars have also focused on determining the factors that motivates young adult women to seek more information about contraceptive methods (Jayasundara, 2021; McKellar et al., 2017; Russo, Parisi, et al., 2013). Fewer studies have investigated individual preferences of sources for LARC information seeking (Jones et al., 2011). Based on the aforementioned scholarship on information seeking behaviors, contraceptive knowledge, and attitudes towards pregnancy prevention, the following hypothesis is proposed:

H3: For non-LARC users, intentions to seek more information about LARC will be correlated with a) levels of motivation to prevent unintended pregnancy and b) initial interest in LARC uptake.

2.1.5 Social Context

As previously illustrated, changes in contraceptive behavior are usually studied by examining associations between individual attributes and indicators of behavioral change. However, it is also important to examine the social context and situational motivations that are also associated with contraceptive behavior. Turner et al. (1994) defines social context as the members of a one's social network, such as friends, family, and partners, as well as our exposure to various media.

From a parent-child perspective, Shakibnia et al. (2018) describes adolescents and young adults as needing support in communicating with parent(s) around contraceptive decision-making and behaviors, including LARC initiation and continuation. Some worry about disclosing LARC initiation to their mothers with worrisome attitudes toward LARC

methods. Mother's worries arise from the 1970s Dalkon Shield failure, in which a faulty IUD design resulted in injuries and deaths, creating suspicion toward the IUD that continues to reverberate in American culture (Marcellus, 2003). Regardless, LARC methods available in the United States are now safe and US FDA-approved for use by all women (Diedrich et al., 2017; J. P. Wu et al., 2018). Young women frequently cite their mothers' opinions as essential in the contraception decision-making process (Koren, 2019). Therefore, despite their now-safety, many young women often inherit distrust towards these methods from their mothers.

From a romantic or sexual relationship perspective, Manlove et al. (2014) determined that, for both pregnancy prevention and contraceptive decision making, romantic and sexual partners tend to be part of the appraisal process and the type of relationship, or the partner's opinions can influence subsequent contraceptive decision-making. Furthermore, sexual partners can play a role in supporting successful use of contraception by encouraging meaningful communication about safer sex and providing support to use a method consistently and correctly. Specifically, greater communication about sex with sexual or romantic partners has been associated with higher levels of contraceptive use (Noar et al., 2006; Widman et al., 2006).

Besides sexual communication, the context of the romantic relationship can be equally important in determining contraceptive use. Often drawing from life-course theory, which argues that behavior cannot be understood independently of the social relationships within which the individual is embedded, the work of Kusunoki and Upchurch (2011) has linked various structural and behavioral dimensions of romantic and dating relationships to contraceptive use. Moreover, studies have shown that condom use declines when

relationship duration, emotional closeness, and relationship commitment increase (Manlove et al., 2007; Manlove et al., 2011; Manlove et al., 2014). Relationships become more serious over time and couples no longer perceive themselves to be at risk of acquiring and transmitting STDs, condom use declines and hormonal method use increases. Over time, couples using hormonal contraception may experience changes in their needs within other hormonal methods. For example, Manlove et al. (2011) found that relationships of four or more years are associated with reduced pill use and an increase in LARC methods. Given that young adulthood is a stage where women may have different relationship context, the following research questions are proposed:

RQ4: Is relationship status associated with LARC use, such that participants in committed relationships are more likely to be LARC users?

RQ4a: Is relationship status associated with interest in LARC uptake, such that participants in committed relationships are more likely to express interest in adopting LARC?

2.2 Theoretical Applications to Contraceptive Behavior

There is an abundance of empirical health communication research exploring how sexual images, experiences, and information impact adolescents and young adults' contraceptive behaviors (Aubrey et al., 2014; O'Donnell & Willoughby, 2017). However, fewer studies have examined the effect our daily interactions may have on our attitudes, beliefs, and behaviors surrounding contraception (Schouten et al., 2007).

To address this gap, theories of behavior change (Ajzen, 1985; Fishbein, 1979; Fishbein & Ajzen, 1977; J. O. Prochaska et al., 2015; Yzer, 2017) can be of utility as they are attempts to describe, predict, and explain the complex systems of health behavior (i.e.,

contraceptive behavior) determinants. Research grounded in behavior change theory may help explain why women who are aware of the benefits of LARC methods still resist changing. Furthermore, encouraging the adoption of LARC methods involves understanding the normative beliefs and attitudes that determine a woman's contraceptive decision making, making this framework useful. Therefore, this dissertation is not only grounded in health behavior theories, but also in normative theories and social cognitive theories.

2.2.1 Health Behavior Change

Theories and models of health behavior, such as the health belief model (Strecher & Rosenstock, 1997), social cognitive theory (Bandura, 2004), the theory of reasoned action (Fishbein, 1979), along with the later theory of planned behavior (Ajzen, 1985) and integrative behavior model (Fishbein, 2009), are based on a social cognitive approach. While these theories all have differences among them, the vast majority contain common factors widely believed to be important to behavior and behavior change. For instance, these theories suggest that the most proximal influences on health behavior are attitudinal, social influence, self-efficacy, and intention variables.

This dissertation is rooted in the tenets of behavior change according to the reasoned action approach (Ajzen, 2012) and the health belief model (Strecher & Rosenstock, 1997). The reasoned action approach is comprised of several theories, such as TRA (Fishbein, 1979), TPB (Ajzen, 1985), and IMBP (Fishbein, 2009), which provide excellent frameworks to conceptualize, measure, and identify factors that affect behavior. The TRA (Fishbein, 1979) focuses on cognitive factors (i.e., beliefs and values) that determine motivation (i.e., behavioral intention). TPB (Ajzen, 1985) is an extension of the

TRA, this theory adds perceived behavioral control and self-efficacy as proximal variables to behavior. Perceived behavior control is one's perceived amount of control over behavioral performance, determined by one's perception of the degree to which various environmental factors make it easy versus difficult to carry out the behavior. Moreover, self-efficacy is one's degree of confidence in the ability to perform the behavior in the face of various obstacles or challenges (Ajzen, 1985).

Finally, IMBP (Fishbein, 2009) is the last adaptation of the TRA; which includes constructs from both TPB and TRA, but adds normative beliefs as distal predictors that impact attitudes. The IMBP specifies two categories of perceived norms: subjective (i.e., commonly shared attitudes or beliefs about social approval of behaviors) and descriptive (i.e., beliefs about what others do regarding common practices). Additionally, the IMBP addresses the intention-behavior relationship, specifying that individual skills and environmental factors are "actual control" variables that will moderate that relationship.

The reasoned action approach hypothesizes the role of exposure to messages and information relating to a behavior. Fishbein & Yzer (2003) posit that exposure to messages and information can influence attitudinal, normative, and control beliefs, which in turn influence intention to perform a behavior. Hence, contraceptive behavior, explained through the RAA is guided by attitudes toward contraception, pregnancy desire, self-efficacy around contraception, and social norms. Notably, this influence occurs not only through exposure to mediated messages, but also interpersonal sources. For example, we can hypothesize that if someone hears positive information about LARC from a close other then they are more likely to form positive attitudinal and normative beliefs about the contraceptive method and be more likely to adopt.

The health belief model HBM (Strecher & Rosenstock, 1997), another health behavior change framework, is a cognitive and interpersonal framework that views humans as rational beings who use a multidimensional approach to decision-making and behavior based on personal goals and judgments of a specific behavior. Previous studies demonstrate the appropriateness of this model in predicting complex preventive health behaviors, such as contraceptive behavior, since it relies heavily on cognitive factors oriented towards goal attainment (e.g., motivation to prevent pregnancy). Moreover, HBM constructs emphasize modifiable factors, rather than fixed variables, which enable feasible interventions to reduce public health problems (e.g., unintended pregnancy) (Hall, 2012; Slater, 1999).

That is to say, contraceptive behavior, explained through the HBM (Rosenstock et al., 1975), is motivated by 1) the desire to avoid pregnancy and the value placed on not becoming pregnant, 2) pregnancy motivations and childbearing desires, and 3) perceived ability to control fertility and reduce the threat of pregnancy by using contraception. Moreover, constructs of the HBM can be applied to the promotion of contraceptive behavior by acknowledging that: 1) an unwanted pregnancy and its consequences can provide the incentive to use contraception (i.e., perceived threat); 2) negative consequences of using contraception, such as side effects of hormonal contraception can limit adoption (i.e., perceived barriers); 3) perceived effectiveness, feasibility and other advantages of using a contraceptive method to prevent pregnancy despite the perceived barriers may spark interest and encourage adoption (i.e., perceived benefits); 4) the use of internal and external stimuli that trigger a consciousness of the perceived pregnancy threat can facilitate consideration of using contraception to remedy the threat (cues to action); and 5) demographic, social, structural, psychological and reproductive factors predictive of

contraceptive behavior interact with an individual's perceptions of pregnancy and decision-making to influence contraceptive use (i.e., modifying or enabling factors).

2.2.2 Vicarious Learning

The social cognitive theory by Bandura (2004) incorporates both the earlier social learning theory (SLT) and self-efficacy theory. The social learning theory emphasizes how behaviors are acquired or modified by watching others in person or through mediated channels. Likewise, the self-efficacy theory contributes to the concept of self-efficacy, that is, confidence in one's ability to undertake a specific behavior. Furthermore, Choi et al. (2017) found that self-efficacy partially mediates the effects of social influences in behavior. Notably, multiple studies have linked self-efficacy to contraceptive use. For example, studies have found that perceived self-efficacy to use contraception is related to less frequent unprotected sex, increased likelihood of contraceptive use at most recent sex, and more frequent use of condoms combined with another contraceptive method (Bandura, 2004; Evans et al., 2011; Noar et al., 2011; Rosenstock et al., 1988).

Studies grounded on the transtheoretical model (Prochaska, 1997) have found that peers may influence the initial precontemplation and contemplation stages of change; a crucial time to encourage LARC uptake. During the precontemplation and contemplation stages, information about contraceptive methods may be interpersonally exchanged, which can then aid individuals in assessing their network's approval or disapproval of specific methods. For example, in their study about college students' sexual and reproductive health literacy experiences, Kohler (1997) illustrated how social interactions may provide a venue for social learning and/ or social influence when they found that when asked about what happened after accessing or receiving contraceptive information, participants reported

discussing their options with their friends, family, partner, or healthcare provider. Moreover, participants highlighted that the opinions of close others were very important when choosing a contraceptive method.

Similarly, a study on contraceptive information seeking behaviors found that personal recommendations from friends are highly trusted sources of information due to individuals' preference to learn about a contraceptive method from someone who has had first-hand experience with the method (Donnelly et al., 2014). Additionally, (Demaria et al., 2019) revealed that non-LARC users were more likely to ask current or previous LARC users about their experiences than discussing LARC with their physician, sexual partner, mother, or friend. Indeed, even in consultations with medical professionals, Wyatt et al. (2014) found that women value their providers' embodied knowledge, stemming from personal contraceptive use, over their formal medical expertise. Medical providers have found this to be a matter of concern, since these informal information-gathering techniques that prioritize experiential knowledge conflict with the tenets of evidence-based medicine (Donnelly et al., 2014). Ironically, Marshall et al. (2018) found that women report using family and friends as primary sources for information concerning LARC due to limited information from health care providers and sexual education programs.

Overall, individuals tend to use their own and others' experiences as well as more traditional "factual" information for decision making. Pazol et al. (2015) postulate that "despite its apparent 'medicalization', women consider contraception as distinct from 'medical matters', and that 'real' expertise over contraception stems from embodied rather than textual knowledge" (p. 362). Studies concur in that although people often claim they prefer not to base their health decisions solely on others' experiences, hearing about others'

decisions can help 1) recognize that a decision must be made (e.g., they need to start or change contraceptive methods); 2) define what the range of options may be (e.g., prescription vs. nonprescription methods, LARC vs. user dependent methods, etc.) and; 3) clarify the alternatives (e.g., abstinence, pregnancy, etc.) (Benson et al., 2012; Burns et al., 2015; Gomez et al., 2019; Hoggart & Newton, 2013; D. S. Lee et al., 2020; Lunde et al., 2017; Madden et al., 2013; McKellar et al., 2019; Meier et al., 2021; R. N. Rimal et al., 2013; Sanders et al., 2014; Schmidt et al., 2015; Ziebland & Wyke, 2012). Furthermore, Levy et al. (2015) describes that learning how others reach their contraceptive decisions and the consequences of choosing that method can help other women evaluate their own decision.

Still, experiential sharing and vicarious learning often transmit misinformation and misconceptions about LARC (Black et al., 2012; Hauck & Costescu, 2015; Michie et al., 2014; Russo, Miller, et al., 2013). Myths, such as LARC causing birth defects and infertility, are common among women's social networks and may negatively impact uptake (K. Black et al., 2012). Moreover, fabricated testimonial/comments about LARC combine a powerful and memorable delivery (i.e., narrative and experimental format) with an unbalanced or misleading message, causing a diffusion of negative memorable messages about LARC. For instance, in their study of unmarried young women, Anderson et al. (2014) found that 75% had heard about LARC from someone else. Furthermore, myths and misconceptions were rampant; 30% of participants thought it was extremely or quite likely that an IUD would cause an infection, 50% believed LARC moved around inside bodies, and 40% thought surgery was required for LARC insertion and removal. Sadly, even

though most participants in this study could identify friends who were happy using a LARC, they still had mixed feelings about the acceptability of these methods.

As a result of an unbalanced diffusion of negative information about LARC, the comprehensiveness and accuracy of knowledge about LARC is dependent on the knowledge levels, information sharing, and personal experiences of social networks (K. White et al., 2013). For example, for those who are unaware or lack knowledge about LARC, being presented with others' experiences that are not typical, inaccurate, or biased can lead to ill-advised and erroneous decisions. Although past literature agrees that the opinions and messages from social networks are important for contraceptive decision making, there is limited information about the influence of social networks specifically in consideration of LARC (Ali et al., 2011a; Kincaid, 2000; Kohler, 1997; Valente et al., 1997; Yee & Simon, 2010). Thus, recognizing that social networks exert a strong influence on beliefs, decision-making and behavior concerning reproductive health, the following hypothesis is proposed:

H4: For non-LARC users, there will be an association between awareness of others' LARC experiences and initial interest in LARC uptake.

2.2.3 Normative Influence

Besides vicarious learning, social networks are also an avenue where social pressures, sanctions, norms, and approval from the community, family members, partners, or friends are transmitted (Mollen et al., 2010; R. N. Rimal et al., 2013; R. N. Rimal & Lapinski, 2015; R. N. Rimal & Real, 2005). Research on social norms in health communication has been largely guided by social psychology theories to extensively analyze how social norms govern behavior (Frost et al., 2012; Geber et al., 2019; Rimal et

al., 2020; Rimal & Lapinski, 2015; Sedlander & Rimal, 2019; Sundstrom et al., 2021; Tschann et al., 2017). The theory of normative influence and the theory of normative social behavior describe social norms as common or generally accepted practices or behaviors across a group of people that are held in place by beliefs or attitudes and influence behavioral outcomes through behavioral intention, perceived behavioral control, and attitudes; specifically, due to the human desire to comply with social norms to fit in with their group (Rimal et al., 2013; Rimal & Real, 2005; Sedlander & Rimal, 2019).

Normative reproductive health communication research has examined and measured the role of social norms in shaping contraceptive use and decision-making (Frost et al., 2012; Geber et al., 2019; Rimal et al., 2020). Costenbader et al. (2017) reported that social norms influence decision-making regarding nondaily contraceptive options in two ways. First, normative influences seem to be responsible for the metonymy of birth control as “the pill”. Second, due to the convenience and lack of manipulation associated with nondaily methods such as LARC, social norms surrounding LARC encompass irresponsibility and laziness.

Furthermore, Ali et al. (2011) found that what is considered “acceptable and appropriate” forms of contraception are determined by social norms regarding sexuality. Additionally, Gilliam et al. (2011) highlighted the importance of supportive relationships for contraception use and choice when they found that some adolescents reported nonuse of effective methods of contraception due to parental disapproval of sexual activity and contraceptive use. Indeed, social norms have been identified as significant barriers to contraceptive use, even after accounting for access and availability (Sedlander & Rimal, 2019).

Overall, even though the broader literature on the influence of social norms on women's sexual behaviors is extensive (Boer & Westhoff, 2006; Tschann et al., 2016), relatively little is known about the impact of social norms on women's use of LARC as contraception, particularly through evidence-based work. Moreover, findings from a systematic review on social norms and contraceptive behaviors by Sedlander and Rimal (2019) revealed that studies have almost exclusively focused on norms at the individual level, with little attention being paid to factors at the sociocultural level. Therefore, inspired by the call from Costenbader et al. (2017) for studies that conceptualize and assess norms about contraceptive use beyond the individual level, the following research question is proposed:

RQ5: What perceived social norms (subjective and descriptive) related to LARC use and uptake do participants report?

2.2.4 Summary, Research Questions, and Hypotheses for Study 1

As previously stated, contraceptive decision-making is an iterative, relational, and reflective journey. Thus, it is necessary to explore interpersonal variables that influence contraceptive choices to further understand the dynamics of reproductive decision-making. In short, this dissertation strives to understand the role that communication plays in the context of contraceptive decision-making by exploring how informal and formal sources support reproductive health decision-making, specifically focusing on social networks (both in person or in online communities) as sources of information, knowledge (**RQ3, H2**), and norms regarding LARC uptake (**RQ4, RQ4a, RQ5**).

There are three gaps in the current literature on LARC uptake that this dissertation attempts to fill. First, there is limited information on what are the dominant or deciding

barriers and facilitators, beyond environmental and systemic factors, influencing LARC uptake (**RQ1, RQ2**). Second, previous health communication scholarship has sporadically examined pregnancy ambivalence and motivation to prevent unintended pregnancy as distal variables to LARC information seeking and uptake (**H1, H3**). Third, although several studies have documented embodied experience as important and valuable source of information about contraception, the role of contraceptive information based on vicarious experiences is still inconclusive (**H4**).

Study 1 of this dissertation aims to bridge these gaps by answering the following research questions and testing the following hypotheses:

RQ1: For non-LARC users, what characteristics of LARC are most reported as a) facilitators and b) barriers to LARC uptake?

RQ2: For non-LARC users, what side effects are most reported as detrimental to LARC uptake?

H1: Motivation to prevent unintended pregnancy will be positively associated with LARC use.

RQ3: Do LARC knowledge levels differ between LARC users and non-LARC users?

H2: For non-LARC users, higher knowledge levels will be positively associated with a) positive attitudes toward LARC, b) higher self-efficacy surrounding LARC uptake, and c) behavioral intentions to adopt LARC.

RQ4: Is relationship status associated with LARC use, such that participants in committed relationships are more likely to be LARC users?

RQ4a: Is relationship status associated with interest in LARC uptake, such that participants in committed relationships are more likely to express interest in adopting LARC?

RQ5: What perceived social norms (subjective and descriptive) related to LARC use and uptake do participants report?

H3: For non-LARC users, intentions to seek more information about LARC will be correlated with a) levels of motivation to prevent unintended pregnancy and b) initial interest in LARC uptake.

H4: For non-LARC users, there will be an association between awareness of others' LARC experiences and initial interest in LARC uptake.

2.3 Study 1 Methodology

Study 1 attempted to: 1) understand what are the dominant or deciding barriers and facilitators, beyond environmental and systemic factors, influencing women's LARC uptake; 2) examine motivation to prevent unintended pregnancy as a distal variable to LARC information seeking and uptake; and 3) examine how attitudes toward LARC, knowledge levels, social context, vicarious learning through social references, and norms influence contraceptive decisions, particularly pertaining to LARC uptake.

2.3.1 Procedure

The data collection for this dissertation was conducted between September and December 2021. To answer the proposed research questions and hypotheses in study 1, young adult women were surveyed on their attitudes and behaviors surrounding contraception. Once potential participants arrived at the survey hosted in Qualtrics, they reviewed the informed consent cover letter and agreed to participate in the study.

Those choosing to participate then began the survey where they reported demographic characteristics, such as age, gender, race, contraceptive status, and history of contraceptive methods. After, questions assessing participant's LARC awareness, knowledge levels, and interest were presented. Additionally, participants answered questions regarding their awareness of their social network's LARC use. Participants who said yes to knowing someone with a LARC were then asked on their network's positive or negative LARC experiences. Finally, participants who were non-LARC users reported their interest in LARC and their perceived barriers and motivators for LARC uptake.

2.3.2 Sampling Procedure for Study 1

Following the approval from the Institutional Review Board (IRB), a survey was shared via the College of Communication and Information's SONA system, an online research system utilized by the College of Communication and Information at the University of Kentucky. Students who completed the survey received one research credit toward their required research participation assignment as part of their coursework for their participation. Additionally, professional networks (e.g., graduate students, former instructors, professional colleagues) were also used to distribute the survey with other young adult women. To incentivize participation, participants who were not affiliated with the University of Kentucky and completed the survey were eligible to participate in a raffle to win one of five \$5 gift cards. A randomized number generator was used to pick the winners from the list of completed responses.

2.3.3 Inclusion Criteria for Study 1

Inclusion criteria for participants included: 1) being between the ages of 18 and 30 years old; 2) be sexually active; and 3) identify as either a biological woman or cis-woman

who engages in sexual activities with either biological men or cis-men regardless of their sexual orientation (e.g., heterosexual, bi-sexual, pansexual, demi-sexual, etc.). Participants who were abstaining from sexual activities were excluded from participating.

2.3.4 Participants for Study 1

A total of 1024 participants began the study. Any response from individuals who did not meet the criteria as well as any incomplete responses were removed from the analysis. Furthermore, participants who did not spend an adequate amount of time completing the study or rushed through by clicking the same response were removed from the sample. Finally, Z-scores were calculated for each scale used in the survey to identify and delete participants whose responses were outliers (i.e., answering outside of one standard deviation of the mean across all items). An 18% attrition rate resulted in a final sample of 836 participants who completed study 1 and study 2.

Participants were all self-identifying biological females or cis-females ($n = 836$) who identified their sexual orientation as either heterosexual ($n = 724$), bisexual ($n = 87$), pansexual ($n = 11$), or other ($n = 14$). Participants were also predominantly white ($n = 707$), followed by Black or African American ($n = 58$), Biracial ($n = 46$), Asian ($n = 22$), and American Indian or Alaskan Native ($n = 3$); furthermore, 5% of participants identified as Latinx or Hispanic ($n = 40$). The age of participants ranged from 18 to 30 years old with majority of participants being between the ages of 18 and 21 ($M = 19.5$ years, $SD = 2.11$).

Participants reported on their medical insurance status at the time they were completing the survey; most participants were privately insured ($n = 483$), on medical assistance ($n = 59$), unsure ($n = 234$), and uninsured ($n = 15$). Additionally, participants reported on their relationship status at the time they were completing the survey; most

participants were not currently involved with anyone ($n = 360$) or dating monogamously ($n = 273$). A complete description of demographic data can be found below in Table 1. Finally, participants reported on their contraceptive method history and the current contraceptive method they were using at the time they were completing the survey (see Table 2 for a complete report of contraceptive history).

Table 2.1 Demographic Information.

Variable	All participants (N = 836) % (n)
Age	
18-19	53 (446)
20-22	32 (266)
23-25	2.4 (20)
26-30	2.8 (23)
Race/ethnicity	
White	84.6 (707)
Black/African American	6.9 (58)
Biracial	5.5 (46)
Latino/Hispanic	4.8 (40)
Asian	2.6 (22)
American Indian/Alaskan Native	.4 (3)
Sexual orientation	
Heterosexual	86.6 (724)
Bisexual	10.4 (87)
Pansexual	1.3 (11)
Other	1.6 (14)
Relationship status	
Not currently involved with anyone	43 (360)
Dating – not monogamous	9.1 (76)
Dating – monogamous	32.7 (273)
Living with partner	4.5 (38)
Married	1.5 (13)
Medical insurance	
Private	57.8 (483)
Medical assistance	7.1 (59)
Uninsured	1.8 (15)
Unsure	28 (234)
LARC Use	
Current LARC user	15.5 (130)
Past LARC user	13.8 (115)

Table 2.2 Current and Past Contraceptive Use.

Method	Current use (N = 836) % (n)	Past use (N = 836) % (n)
None	8.1 (68)	83.6 (699)
Withdrawal	23.8 (199)	1.8 (15)
Condom	17.6 (147)	70.6 (590)
Dual method	31.9 (267)	2.7 (23)
Pills	49.5 (414)	2.4 (20)
Patch	.8 (7)	4.7 (39)
Ring	1.5 (13)	8.1 (68)
Depo-Provera	1.9 (16)	1.1 (9)
Hormonal IUD	10.3 (86)	5.1 (43)
Non-Hormonal IUD	1.7 (14)	(0)
Implant	3.7 (31)	(0)
Diaphragm	(0)	1.1 (9)
Gel	.5 (4)	28.8 (241)
PlanB	(0)	4.9 (241)

2.3.5 Measures Across Study 1 and Study 2

2.3.5.1 Motivation to Prevent Unintended Pregnancy

Contraceptive behavior, viewed through the HBM (Strecher & Rosenstock, 1997), is motivated by an individual's: 1) desire to avoid pregnancy and value placed on not becoming pregnant; 2) nonspecific, stable differences in pregnancy motivations and childbearing desires; and 3) perceived ability to control fertility and reduce the threat of pregnancy by using contraception. Sufficient motivation must exist to make prevention of pregnancy salient and relevant and to support the contraceptive behavior decision-making process (Gomez & Freihart, 2017). Thus, based on items used in previous studies (Higgins, 2017; Sundstrom et al., 2017), motivation to avoid unintended pregnancy was measured with the question, "How important is it for you to not become pregnant in the next 3 months?" Participants responded to this question on a 5-point Likert scale ranging from 1 (not at all important) to 5 (extremely important).

2.3.5.2 LARC Awareness

To assess non-LARC users' awareness of LARC, participants responded either yes, no, or not sure, to the question "Have you heard about long-acting reversible contraceptive methods such as the IUD or implant before?" Moreover, to assess sources of LAC information, participants who reported awareness of LARC methods answered the question "Where have you heard about these long-acting birth control methods such as IUDs or implants? (Select all that apply: medical provider; friends; mother; siblings; other family members; TV advertisement; and social media)."

2.3.5.3 LARC Knowledge

LARC knowledge was measured through a knowledge test using items from Gomez et al. (2015). Participants were asked to read 15 statements and facts about LARC and respond whether they thought those statements were true or false. Questions targeted knowledge about LARC efficacy (e.g., "IUDs and Nexplanon implants are two of the most effective forms of reversible birth control available for women"); mechanics (e.g., "All IUDs have hormones"); eligibility (e.g., "You can have an IUD or Nexplanon implant if you've never had a baby"); side effects (e.g., "IUDs and Nexplanon implants hurt your ability to get pregnant in the future"); and functionality (e.g., "IUDs and Nexplanon implants protect against STDs including HIV", "An IUD can be in place for 3 to 10 years"). Response options were coded as correct versus incorrect, each correct answer was counted as 1 point, with a maximum possible score of 15.

2.3.5.4 Social Context

Social context was conceptualized using three constructs: relationship status, awareness of network's LARC use, and awareness of others' positive or negative LARC

experiences. Previous studies have found that as relationships become more serious over time the use of condoms decline while the use of hormonal and longer-term methods increases (Manlove et al., 2007; Manlove et al., 2011; Manlove et al., 2014). Therefore, relationship status was measured by participants reporting whether they were: “Not currently involved with anyone”; “Dating – not monogamous”; “Dating – monogamous”; “Living with partner” or; “Married”. Relationship status of participants at the time of the survey are presented in Table 1 above.

The second construct of social context, awareness of network’s LARC use, was measured with the dichotomous yes/no question: “Do you know any close others (e.g., friend, family, coworker, classmate, etc.) that have or have had an IUD or implant?” Finally, the third construct of social context, awareness of others’ positive or negative LARC experiences, was measured with two dichotomous yes/no questions: “Do you know of a person close to you who had a good experience with an IUD or implant?” and “Do you know of a person close to you who had a bad experience with an IUD or implant?”

2.3.5.5 Intended Information Seeking Behaviors

Measures from prior studies on reproductive information seeking behaviors were adapted to assess participants’ intent to seek LARC information from various possible sources (Jayasundara, 2021). Intention to seek more information about LARC was measured with the item “How likely are you to seek more information about LARCs from a [1- healthcare provider; 2- the Internet; 3- people close to you]?” Participants responded to each question on a 5-point Likert scale from 1 (very likely) to 5 (very unlikely).

2.3.5.6 Direct Behavioral Constructs

To predict behavioral intentions to adopt a LARC, measures grounded in behavior change theories, specifically the reasoned action approach (Fishbein & Ajzen, 2010) and the health belief model (Hall, 2012) were utilized. The three major categories of cognition about behavior measured were: attitudes, norms, and self-efficacy relating to LARC uptake. Measures were adapted from previous studies on adolescent and young adult women contraceptive behaviors (Hall, 2012). Inspired by (Demaria et al., 2019), direct constructs (attitudes, norms, self-efficacy) and behavioral intentions were collected using several items, then averaged to form single scales for each construct.

LARC attitudes measured beliefs about LARC uptake using these items adapted from Gomez et al. (2015): “Choosing a LARC as a birth control method is good”; “Choosing a LARC as a birth control method is unwise”; “Choosing a LARC as a birth control method is well-planned”; and “Choosing a LARC as a birth control method is reckless or unsafe.” Responses were collected on a 4-point scale from 1 (strongly agree) to 4 (strongly disagree), then re-coded so that negative responses indicated unfavorable attitudes toward LARC, while positive values indicated favorable attitudes toward LARC. Attitude items were averaged to form a single scale with high reliability ($M = 1.24$, $SD = 1.22$, $\alpha = .95$).

Perceived social norms was measured by adapting items from past studies on reproductive health and normative social referents (Costenbader et al., 2017). Injunctive norms measured beliefs about others attitudes and approval surrounding LARC and were assessed with two items: “Most people who are important to me would approve of my using a LARC as a birth control method”; and “Most people who are important to me would have (positive/negative) things to say about LARC.” Descriptive norms measured beliefs

about others use of LARC and were assessed with two items: “Most women my age use LARC as birth control methods”; and “Most women my age have interest in using LARC as birth control methods.” Agreements with these statements were collected on a scale from 1 (strongly agree) to 4 (strongly disagree) then re-coded so that negative responses indicate disagreement, while positive responses indicate agreement. Responses were averaged into one score to create a single scale with strong reliability ($M = 1.4$, $SD = 1.0$, $\alpha = .87$).

Self-efficacy measured participants’ perceived ability and likelihood to control LARC uptake and it was measured directly with three items adapted from previous studies (Sundstrom et al., 2016): “I am confident that if I wanted to use a LARC I would figure out how to do so”; “I think it will be hard for me to figure out how to acquire a LARC from a health care provider”; and “Getting a LARC would be too difficult for me (for example, having to find a provider who will insert it, schedule an appointment, etc.)” Agreements with these statements were collected on a scale from 1 (strongly agree) to 4 (strongly disagree), then re-coded so that negative responses indicate disagreement, while positive responses indicate agreement. Self-efficacy items formed a single scale with high reliability ($M = 1.90$, $SD = 1.30$, $\alpha = .88$).

Behavioral intent to adopt LARC measured intentions to obtain and use LARC as contraception and was assessed by adapting items from past studies on LARC promotion (Burns et al., 2015), including: “If someone close to you (e.g., parents, siblings, significant others, or friends) encourage you to switch your birth control method to LARC, how likely would it be for you to comply?”; “How likely are you to use a LARC in the next six months?” and “How likely are you to never choose a LARC as a birth control method?” Participants responded to each question on a 5-point Likert scale from 1 (very likely) to 5

(very unlikely). Measures were re-coded so that negative measures indicate lack of behavioral intention, while positive measures indicate intention. The responses were averaged to form a single scale of intention with high reliability ($M = 1.07$, $SD = 1.5$; $\alpha = .86$).

2.3.5.7 Demographics

Participants were asked to report basic demographic information, including their age, race and ethnicity, and current insurance coverage. Moreover, participants responses to questions about their sexual orientation and sexual activity (i.e., abstinent, or not) to determine eligibility to participate in the study. Demographic characteristics of participants are presented in Table 1 above.

2.3.6 Measures for Study 1 Only

The survey for study part 1 can be found in Appendix A.

2.3.6.1 LARC Use

LARC use measured current or previous personal LARC use and was measured by asking two questions: “What birth control method are you currently using? (If you use a condom in addition to other methods, please select all that apply)” and “Select all the birth control methods you have used in the past.” Contraceptive methods were aggregated into two categories: 1) long-acting reversible contraception (LARC), which comprise the contraceptive implant, non-hormonal IUD, and hormonal IUD; and 2) other methods, which included all other non-LARC methods (i.e., oral contraceptive pills, vaginal ring, patch, contraceptive injection, and condoms). Based on their responses, participants were classified as LARC users (past or current) or non-LARC users and coded dichotomously (non-users coded as 0 and user coded as 1).

2.3.6.2 Perception of LARC Characteristics

To uncover facilitators that influence LARC uptake, non-LARC users were presented with a list of eight positive characteristics about LARC adapted from previous work on LARC perceptions and uptake (Coombe et al., 2016), including: “It is very effective in preventing pregnancy”; “Some LARCs do not have hormones”; “I would not have to think about or do anything before sex”; and “It lasts for a long time” and asked to select the characteristics that would interest them in adopting a LARC. Participants also had the option to select “None of these characteristics are attractive.”

To uncover barriers that influence LARC uptake, non-LARC users were presented with a list of seven possible barriers about LARC adapted from previous work on LARC access and uptake (Pritt et al., 2016), including: “A doctor or nurse has to put it in and remove it”; “I don’t like the idea of having something in my body”; and “It might hurt to get it inserted or taken out” and asked to select the statements that would discourage them from adopting a LARC.

Finally, to uncover side effects that influence LARC uptake, non-LARC users were presented with four common side effects of LARC according to previous work on LARC satisfaction, continuation, and discontinuation (Maslyanskaya et al., 2015; Lopez et al., 2009; Trussell et al., 2013; Simmons et al., 2019), such as: “Potential loss of period”; “Light bleeding between periods for 3 to 6 months”; “Heavier periods and cramping”; and “Potential weight change” and asked to score the magnitude these side effect would have in deciding to adopt LARC. Participants responded to each statement on a 3-point Likert scale from 1 (Would be bothered enough to not use a LARC) to 2 (Would be bothered, but would still use a LARC) to 3 (Would not be bothered).

2.3.6.3 Interest in LARC

To assess initial interest in LARC uptake, non-LARC users were asked: “How interested are you in using a long-acting reversible contraceptive method such as an IUD (hormonal or non-hormonal) or implant?” Participants responded to each question on a 4-point scale from 1 (*Very interested*) to 4 (*Not interested*). The response to this question was used as the referent category for interpretive purposes when comparing the influence of campaign talk on intention to adopt LARC.

2.3.7 Data Analysis Plan for Study 1

Descriptive analyses were conducted (i.e., frequencies) to better understand the characteristics of LARC that non-LARC users perceive as facilitators or barriers (RQ1) to uptake, as well as the potential side effects of LARC that are seen as detrimental by participants (RQ2). Fisher's Exact Test for Count Data was performed to determine whether there is a significant association between the motivation to prevent unintended pregnancy and LARC use (H1). A one-way ANOVA was performed to compare the effect of knowledge levels on LARC use (RQ3) to determine whether there is a statistically significant difference in LARC knowledge levels between LARC users and non-LARC users. Another one-way ANOVA was performed to compare the effect of knowledge levels on attitudes toward LARC, self-efficacy and behavioral intentions to adopt LARC (H2).

A Chi-Square Test of Independence was performed to assess the relationship between participants' relationship status and LARC use (RQ4) and for non-LARC users, the relationship between participants' relationship status and interest in LARC uptake (RQ4a). Descriptive analyses were conducted (i.e., frequencies) to better understand

participant's perceived subjective and descriptive norms surrounding LARC use and uptake (RQ5).

A Spearman's rank correlation was computed to assess the relationship between a) levels of motivation to prevent unintended pregnancy and b) initial interest in LARC uptake and intentions to seek more information about LARC (H3). Finally, a multiple linear regression was used to test if awareness of others' LARC experiences (negative and/or positive) significantly predicted initial interest in LARC uptake (H4). All analyses were conducted using R Statistical Software, version 4.0.

2.4 Results of Study 1

The research questions and hypotheses posed in this study aimed to further understand contraceptive decision-making and interest in LARC uptake. Overall, LARC contraceptive decision-making can be explained by: 1) the barriers and facilitators of LARC uptake; 2) various factors influencing LARC use, such as relationship status, attitudes, and knowledge levels; 3) normative perceptions surrounding use and uptake; and 4) attitudes, self-efficacy, and vicarious learning as predictors of information seeking and behavioral intentions.

2.4.1 Barriers and Facilitators

RQ1 asked what characteristics of LARC are most reported as a) facilitators and b) barriers to LARC uptake. Only participants that were categorized as non-LARC users (n = 706) responded to this question. In Table 3, all frequencies of what participants characterized as facilitators and barriers to LARC uptake are presented. In summary, the most frequently selected facilitator to LARC uptake was LARC's high efficacy in preventing pregnancy (95.5%), followed by how long they last (80%), how easy they are

to use (68.3%), how they require no thinking or action before sex (63.2%), and how they do not get in the way of sex in comparison to barrier methods such as condoms (50.6%). Conversely, the most frequently selected barrier to LARC uptake was the potential painful insertion or removal process (90%), followed by fear of having a foreign object inside your body (52.4%), LARC’s lack of STI protection (43%), needing a doctor or nurse to insert or remove the LARC (40.2%), cost of the device and the insertion/removal visits (36.5%), and LARC containing hormones (25.8%).

Table 2.3 Perceptions of LARC Characteristics – Facilitators and Barriers.

	Non-LARC Users (N = 706) % (n)
Facilitator	
Efficacy	95.5 (674)
Last a long time	80 (564)
Easy to use	68.3 (482)
Don’t have to think about it	63.2 (446)
Not in the way of sex	50.6 (357)
Hormone-free option	37.8 (267)
It’s not a barrier method	37.4 (264)
Discreteness	24 (169)
Barrier	
Painful insertion/removal	90 (635)
Fear	52.4 (370)
No STI protection	43 (303)
Hard to get	40.2 (284)
Cost	36.5 (258)
Dislike of hormonal methods	25.8 (182)

RQ2 asked about the influence potential LARC side effects may have in participants’ interest in uptake. This question was answered by gathering descriptive statistics (i.e., means, standard deviations) that allowed for the comparison of participants’ mean scores. Only participants that were categorized as non-LARC users (n = 706) responded to this question. Overall, participants reported that potentially losing their periods as a side effect of LARC would not concern them and they would still consider

adopting a LARC in the future ($M = 2.68, SD = .74$). Moreover, potentially experiencing light bleeding between periods for 3 to 6 months as a side effect of LARC would bother participants but not enough to not consider using a LARC ($M = 2.13, SD = .85$). However, potentially experiencing heavier periods ($M = 1.91, SD = .76$) and gaining weight ($M = 1.45, SD = .77$) as a side effect of LARC would bother participants enough to not adopt a LARC in the future.

2.4.2 Factors Influencing LARC Use

The first hypothesis (H1) predicted that motivation to prevent unintended pregnancy would have a significant, positive association with LARC use. Fisher’s exact test was used to determine if there was a significant association between motivation to prevent unintended pregnancy and LARC use. Responses from all participants ($N = 836$), LARC users and non-users, were used in the analysis. Overall, there was no statistically significant association between motivation to prevent unintended pregnancy and LARC use (two-tailed $p = 0.918$). Thus, hypothesis 1 was not supported. Table 4 presents the results of the Fisher’s exact count test.

Table 2.4 Fisher’s Exact Test of LARC Use and Motivation to Prevent Pregnancy.

Motivation level	LARC User (n = 130) n (%)	Non-LARC User (n = 706) n (%)	Sig.
Not at all important	6	40	
Slightly important	0	5	
Moderately important	3	15	
Very important	10	45	
Extremely important	111	601	
Fisher’s exact			.918

RQ3 asked if LARC knowledge level differs between LARC users and non-LARC users. To measure knowledge levels, participants responded to 15 true or false questions covering LARC’s efficacy, mechanics, eligibility, side effects, and functionality. Each correct answer counted as 1 point, allowing for a maximum score of 15 (i.e., high knowledge). A one-way ANOVA was conducted in which LARC knowledge test scores served as the dependent variables and the status of LARC use as the independent variable. Responses from all participants (N = 836), LARC users and non-users, were used in the analysis, however, 20 incomplete responses were not included. Results revealed a statistically significant difference in LARC knowledge levels between LARC users (test score, M = 11.1) and non-LARC users (test score, M = 7.6), so that LARC users were more knowledgeable about the mechanisms, side effects, and procedures of LARC and LARC uptake $F(1, 806) = 18.1, p < .001$ (see Table 5).

Table 2.5 ANOVA Comparing Knowledge Test Score by LARC Use.

LARC Test Score	Sum of Square	df	Mean Square	F	Sig.
Between groups	74	1	74.2	18.1	P < .0001 ***
Within groups	3304	806	4.1		
Total	111	807			

RQ4 and RQ4a asked about the potential influence relationship status has on LARC use, such that a) LARC users may be more likely to be in committed relationships compared to non-LARC users and b) non-LARC users in committed relationships may be more likely to express interest in LARC uptake. A Chi-Square Test of Independence was performed to assess the relationship between relationship status (i.e., in a committed relationship or not) and LARC usage (RQ4). Responses from all participants (N = 836),

LARC users and non-users, were used in this analysis. Results showed no significant relationship between the two variables, $X^2(2, N = 836) = 2.86, p = 0.24$, meaning that LARC use or non-use was not related to participants' relationship status, specifically being in a committed relationship or not. Another Chi-Square Test of Independence was performed to assess the relationship between relationship status (i.e., in a committed relationship or not) and interest in future LARC uptake. Only participants that were categorized as non-LARC users ($n = 706$) responded to this question. Among non-LARC users, being in a committed relationship was strongly correlated with interest in adopting a LARC in the future $X^2(6, N = 675) = 27.05, p < .001$.

2.4.3 Normative Perceptions

RQ5 asked about participants perceived social norms regarding LARC use and uptake. This question was answered by gathering descriptive statistics (i.e., means, standard deviations) that allowed for the comparison of participants' mean scores. Responses from all participants ($N = 836$), LARC users and non-users, were used in the analysis. Results showed that, in terms of subjective norms, participants perceived that most people important to them would approve of them using a LARC ($M = 1.9, SD = 0.76$). Participants also perceived that most people important to them would have positive things to say about LARC ($M = 2.06, SD = 0.77$). In terms of descriptive norms, participants perceived that most women similar to them are not using LARC ($M = 2.88, SD = 0.78$), however, participants perceived that some women similar to them are interested in LARC ($M = 2.46, SD = 0.83$).

2.4.4 Predictors of LARC Information Seeking and Uptake

Hypothesis 2 predicted that knowledge levels would be positively associated with a) positive attitudes toward LARC, b) higher self-efficacy surrounding LARC uptake, and c) behavioral intention to adopt LARC. Multiple one-way ANOVA were performed to analyze the relationship between the dependent variable (i.e., knowledge test score) and independent variables (i.e., attitudes, self-efficacy, and behavioral intention). Only responses from participants that were categorized as non-LARC users ($n = 706$) were used for analysis. Analyses revealed a statistically significant difference between LARC knowledge levels and positive attitudes toward LARC, such that participants with higher knowledge levels had more positive attitudes ($F = 38.7, p < .0001$). Furthermore, participants with higher knowledge levels had higher self-efficacy surrounding LARC uptake, such that participants with higher knowledge levels had more perceived behavioral control toward LARC uptake compared to participants with less knowledge ($F = 35.5, p < .0001$). In contrast, knowledge levels were not significantly related to behavioral intention to adopt LARC ($F = 15.9, p < .488$).

The third hypothesis (H3) predicted that, among non-LARC users, levels of motivation to prevent unintended pregnancy and initial interest in LARC uptake would be associated with intentions to seek information about LARC. A Spearman's rank correlation was computed to assess the relationship between the independent variables (i.e., motivation to prevent unintended pregnancy and interest in LARC uptake) and the dependent variable (i.e., seeking more information on LARC). Only responses from participants that were categorized as non-LARC users ($n = 706$) were used for analysis. Results showed a slight negative correlation between motivation to prevent unintended pregnancy and intentions

to seek more information about LARC $r(1) = -.09$. Similarly, there was a slight negative correlation between interest in LARC uptake intentions to seek more information about LARC $r(1) = -.07$. Overall, hypothesis 3 cannot be supported.

The fourth hypothesis (H4) predicted that knowing of network's use of LARC and their positive or negative experiences would be related to initial interest in future LARC uptake. A multiple linear regression was conducted to test if awareness of others' LARC use and experiences significantly predicted initial interest in LARC uptake. Only responses from participants that were categorized as non-LARC users ($n = 675$) were used for analysis; 31 incomplete responses were not included. Regressions were calculated by comparing no/unsure responses to yes responses (see Table 6). Overall, simply being aware of others' LARC use was not related with initial LARC interest ($\beta = -.093$, $p = .6$; $\beta = .145$, $p = .478$). However, knowing of other's negative LARC experience corresponded with a decrease in response toward being interested in LARC ($\beta = -.245$, $p = .01$). Moreover, not knowing of other's positive LARC experience corresponded to an increase in response toward not being interested in LARC ($\beta = .709$, $p < .0001$). The same was observed with participants who were unsure if they knew of other's positive LARC experience ($\beta = .393$, $p = .005$).

Table 2.6 Regression of Awareness of Other’s LARC Experiences and LARC Interest.

	Non-LARC Users (N = 675)	
	β Estimate [95% CI]	p-value
Awareness of others’ LARC use		
No	-.093 [-.441, .256]	.600
Unsure	.145 [-.255, .544]	.478
Awareness negative experience		
No	-.245 [-.433, -.058]	.01**
Unsure	-.221 [-.541, .01]	.177
Awareness positive experience		
No	.709 [.440, .978]	< .0001***
Unsure	.393 [.121, .665]	.005**

2.5 Preliminary Discussion and Implications for Study 1

Every year, unintended pregnancies cause an economic burden in the United States. According to Lopez et al. (2009) and Trussell et al. (2013), taxpayers pay approximately \$11 billion annually to services related to 1 million unintended births. However, increasing effective contraceptive use can be a highly cost-effective public health measure to alleviate tax costs. In fact, Aslam et al. (2017) determined that with every \$1 spent in public funding for family planning (e.g., increasing access to effective contraception, reproductive education, etc.) can save taxpayers \$3.74 in pregnancy-related costs alone.

According to many epidemiologists, it is imperative to understand current contraceptive behaviors to better understand how to effectively change or improve sexual and reproductive behaviors (Parks & Peipert, 2016). In response, this study sought to explore attitudes, self-efficacy, levels of LARC knowledge, and relationship context as proximal variables to LARC uptake, with a focus on social sources of contraceptive information and networks’ influence on perceived norms, information seeking, and subsequent contraceptive behaviors.

According to the results of this study, LARC contraceptive decision-making is influenced by participants' perceived barriers, such as the potentially painful insertion and removal process, as well as perceived facilitators, such as LARC's high efficacy and ease to use. Other factors influencing LARC use are attitudes and knowledge. Moreover, although relationship status does not influence LARC use it is related to interest in potential uptake. Finally, normative perceptions surrounding use and uptake as well as vicarious learning through others' LARC experiences act as predictors of information seeking and behavioral intentions.

2.5.1 Contraceptive Decision-Making and LARC Use

This study attempted to better understand why some women are apprehensive toward LARC uptake, specifically focusing on barriers, facilitators, and device characteristics. Participants in this study expressed that, although there are many upsides to LARC, namely their high efficacy, how long they last, and their ease of use due to not having to think or do anything before or during sex to avoid pregnancy; they still perceive many barriers that hinder uptake. Particularly, many participants expressed hesitation around the insertion and removal process of both the IUD and the implant.

Specifically, participants reported fear of having the IUD inserted into the uterus and progestin implants into the inside of the upper arm. Additionally, participants reported discomfort with the idea of having a foreign object inside of their bodies at all times. Previous studies have found similar results in that many individuals are scared about the mechanics of LARC. For example, several studies have found that their participants expressed concern about the LARC device becoming "stuck" inside their bodies (Marshall et al., 2016; Melo et al., 2015; Walker et al., 2019). Similarly, Potter et al. (2014)

found that their participants expressed fear about IUD expulsion, both in general and during intercourse, which would put them at risk of an unintended pregnancy.

Moreover, participants reported that the idea of having a foreign object inside of their bodies without the ability to take it out as they choose diminishes the attractiveness of LARC. This was specially concerning for participants because if they were to decide to discontinue the method, the removal process would require them to make a doctor's appointment to see a medical provider trained in LARC insertion and removal. Previous findings have been diverse, for example, although Eeckhaut et al. (2021) found that their participants felt LARC methods increased their control over pregnancy, their bodies, and their lives, Gomez et al. (2015) found that their participants perceived a loss of control because of the long duration of LARC methods and the lack of user involvement. Regardless, most of the previous literature is consistent with the findings of this study, demonstrating that a 'loss of bodily control' as a consequence of not being able to start or end a method at any time discourages women from using LARC methods (Pritt et al., 2016). The desire for this control may explain why there is a substantial preference towards the birth control pill, as it is associated with preserved control over reproduction (e.g., stop taking the pills once pregnancy is desired) and the menstrual cycle (e.g., skipping sugar pills to avoid menstruation).

Participants in this study reported not adopting a LARC because they are not interested in hormonal methods. Hormonal contraception has been a debated topic for decades, it is common to experience some levels of anxiety about the side effects of hormonal contraception on the body. For example, Kumar (2018) found that women tend to worry about the interference of contraceptive methods on menstrual cycles, the return to

fertility once discontinued, and disruption in the balance of their “natural bodies.” In fact, Gomez et al. (2014) found that their participants did not like the term ‘long acting’ in LARC because it hinted that future fertility could be jeopardized.

Previous studies demonstrate the role in which ‘desired’ and ‘undesired’ side effects play in the decision to use, or not to use specific contraceptive methods (Marshall et al., 2016; Melo et al., 2015; Walker et al., 2019). For example, Gomez et al. (2014) found that side effects dependent on contraceptive characteristics are predictors of method uptake, satisfaction, and continuation. Moreover, Lessard et al. (2012) and Walker et al. (2019) found that methods that lead to improvements in bleeding and cramping patterns, do not require daily administration, and are not coital dependent are independently associated with greater contraceptive satisfaction among adult women.

Contraceptive trials have found that potentially losing your period (i.e., amenorrhea) can be a common side effect of hormonal LARC (Diedrich et al., 2017). Participants in this study reported that experiencing amenorrhea as a side effect of LARC would not concern or stop them from acquiring a LARC. Some studies have found similar findings in that some women find losing their period as a positive side-effect of LARC (Usinger et al., 2016). In fact, some women have reported that potential loss of period is a driving motivator to switching to a LARC method (Gomez & Freihart, 2017).

Another common side effect of LARC, especially among non-hormonal methods such as the Copper IUD, is an increase in the length and flow of menstruation (Hillard, 2013). Additionally, some experiments have observed an increase in weight with the use of contraception (Wu & Pickle, 2014). However, weight gain as a side effect of LARC remains inconclusive (Dehlendorf et al., 2011; Dehlendorf, Ruskin, Grumbach, et al., 2010;

Rehring et al., 2019). Both of these side effects were the most concerning factors for participants in this study, as they reported that potentially experiencing heavier periods and gaining weight stop them from considering using a LARC contraception.

The concern over weight gain highlights the importance of acknowledging the inherently contextual and transient meanings women attach to their decisions to use and change contraceptive methods. Side-effects are not experienced in a social vacuum, but rather the meanings attached to certain side effects can be socially informed and reflective of a particular sociocultural context. For example, Wyatt et al. (2014) found that weight gain as a side-effect was viewed negatively by women and was likely to lead to discontinuation due to culturally idealized beauty images that emphasize thinness more so than women's satisfaction with the method of contraception.

Previous studies grounded in the HBM have found that subjective knowledge contributes to an individual's self-efficacy in contraceptive decisions as well as their understanding of perceived benefits and barriers. Under these assumptions, a woman is better able to make an informed contraceptive decision when having confidence in herself and her understanding of the benefits, risks, and outcomes of all the contraceptive choices available. Knowledge about contraception has been associated with increased adoption rates for LARC (Bharadwaj et al., 2012; Gomez & Freihart, 2017; Pazol et al., 2015). Conversely, lack of knowledge about LARC has been associated with misperceptions and myths about the risk and side effects of LARC, incorrect use, and LARC discontinuation (Rosenstock et al., 2012; Usinger et al., 2016).

As expected, participants in this study who were LARC users scored higher in LARC knowledge than participants who have never used a LARC. Although there were

discrepancies in LARC knowledge between users and non-users, participants who were non-users that scored higher in knowledge did have more positive attitudes and self-efficacy toward LARC uptake. However, there was no statistically significant relation with intentions to adopt LARC. As mentioned previously, researchers have identified this resistance as the paradox of inertia (DeMaria et al., 2019), which identifies the phenomenon of acknowledging LARC as a superior choice and perceiving significant disadvantages in non-LARC methods yet resisting to switch to a LARC method.

As has been noted, in addition to systemic barriers concerning access to contraception, there is also a severe lack of comprehensive sex education and gaps in contraceptive knowledge in the United States (Pazol et al., 2015). These education gaps are not only present in formal school systems but also within family education, peer interactions, and information available on the Internet (Jones & Biddlecom, 2011a; Kilfoyle et al., 2016). Moreover, differences in knowledge may be related to sexual socialization (i.e., the process by which one acquires sexual knowledge and values) and societal factors such as education levels, culturally based health myths, and familial conversations about reproductive health.

Increasing knowledge levels about LARC is imperative, especially since many studies have found that fears toward LARC methods among young women are likely tied to a poor understanding of female anatomy. For example, Usinger (2016) found that concerns over damage caused by the IUD revealed that participants did not understand the physical relationship between the vagina, urethra, uterus, ovaries, and abdominal cavity. Furthermore, some women are unaware of the term “long-acting reversible contraception” or “LARC”. For instance, Black et al. (2012) found that many of their young women

participants assumed that long-acting reversible contraception meant permanency and as a result included hysterectomy and sterilization as LARC methods.

According to Pritt et al. (2016), contraception appears to offer a means of personal empowerment to women. However, despite the critical role of contraceptive preferences in determining method selection, continuation, and discontinuation, little research has attended to women's attitudes toward, motivations for, and aversions to using LARC (Bachorik et al., 2015; Rose et al., 2011; Whitaker et al., 2008). Instead, most of the attention has been given to exploring the facilitators and barriers of LARC use (N. Kumar & Brown, 2016; Secura et al., 2010, 2014).

In terms of individual attributes and attitudes, this study explored the role of motivation to avoid pregnancy in LARC uptake or intent to adopt LARC. Motivation to avoid pregnancy is an essential attitude to explore while studying unintended pregnancy prevention because avoiding pregnancy requires women not only to have access to the means for contraception, but also have the desire to limit childbearing until actively sought for. Moreover, studies have found that individuals who report ambivalent attitudes toward pregnancy or low motivation to avoid pregnancy have an elevated likelihood of not using any contraception or have inconsistent method use (Gomez & Freihart, 2017; Ryan et al., 2007).

However, in this study, motivation to avoid unintended pregnancy was not associated with LARC use. In fact, even though most participants mentioned that avoiding pregnancy was extremely important to them, only 15% were LARC users. Attitude alone may be limited in its ability to predict health behavior (Spies et al., 2010; Tschann et al., 2016); thus, exploring additional factors influencing contraceptive choice and intention to

use LARC may increase uptake and contribute to a decrease in unintended pregnancies. We must be aware that contraceptive decision making may not follow a logical model of “I will adopt the most effective contraceptive method available”, therefore, it is imperative that we examine and measure social factors that impact contraceptive behaviors.

2.5.2 The Social Context of Contraceptive Decision-Making

In an ideal world, individuals would find a contraceptive method perfectly suited to them and they would use that method until they are no longer exposed to the risk of an unintended pregnancy. However, individuals’ personal preferences and decision-making frequently do not conform to the rational choice models subscribed to by practitioners and researchers (Higgins et al., 2016). In the real world, difficulty in using methods consistently and correctly, dissatisfaction with available methods, and social opposition to methods are among the reasons for contraceptive discontinuation.

Previous studies have found that there are many social factors that may impact contraceptive behaviors. For example, Sundstrom (2016) identified friends, family members, and physicians as the most influential interpersonal relationships related to contraceptive decision making. Peer influences on sexual behavior increase during adolescence and continue into adulthood (Tschann et al., 2017). Studies have indicated that teenagers and young adult women tend to engage in similar risky sexual behaviors as their friends (Ali et al., 2011; Del Castillo et al., 2020; Wright, 2016). Although this may be true, data on the relationship between discussions among friends and specific female contraceptive behaviors are limited. Moreover, communication is a fundamental process through which parents convey ideas, values, beliefs, expectations, information, and knowledge to their children, therefore, parents can play a critical role in their children’s

reproductive health as they move into adolescence and eventually into adulthood (Evans et al., 2011).

One social factor this study examined is the role of relationship status on LARC use or interest in adopting LARC. Studies have found that males tend to rely on their partners for contraceptive information and decision making (Noar et al., 2006). It is possible that men consider birth control to be the responsibility of their female partner given that most contraceptive options with the exception of male condoms are functionally targeted towards women; as well as the double standards prevalent about sex in religious and popular ideologies (Kusunoki & Upchurch, 2011; Manlove et al., 2007; Manlove et al., 2011; Manlove et al., 2014).

Additionally, previous research has found greater contraceptive use, especially greater hormonal method uses (and declining condom use), in longer/more committed relationships (Kusunoki & Upchurch, 2011). This research often equates increased relationship duration with relationship seriousness and commitment. However, this study did not find any association between participants being in a committed relationship and LARC use. However, participants in committed relationships did appear to have more interest in potentially adopting a LARC in the future.

Another social factor examined in this study was the normative determinants of contraceptive decision-making. Examining the normative perceptions surrounding contraception require an understanding of health behaviors while considering not only women's immediate social context but also the backdrop of current socio-political structures that have an impact on women's health and well-being. Previous studies discuss the importance of close others and contraceptive use, specifically as it relates to the

transmission of norms. For example, when evaluating their contraceptive options, individuals frequently seek information from others who have used the method they are interested in (Madden et al., 2013; Meier et al., 2021). Moreover, one's own experience or those of our friends and family, influence the attitudes and intentions toward potential LARC uptake (Benson et al., 2012; Burns et al., 2015).

Participants in this study perceived they would have an overwhelming support from close others if they decided to adopt LARC (i.e., perceived injunctive norms). Not only did participants think that people close to them would approve of them using a LARC, but they also thought that if they were to talk to others about LARC, their close others would have mostly positive things to say. However, even though participants believed that their close others would approve of their LARC uptake, they did not think others are interested in using LARC (i.e., perceived descriptive norms). These perceived descriptive norms may limit LARC uptake, as findings from previous studies suggest that the perception of network members' attitude toward family planning is positively associated with contraceptive use (Ali et al., 2011; Yee & Simon, 2010).

Moreover, previous findings indicate that LARC use is greatly influenced by the contraceptive behaviors of one's social network. For example, Sedlander and Rimal (2019) found that women were more inclined to view LARC positively if their social support systems also expressed similar opinions or if they had a LARC. Additionally, women who heard about LARC from someone in their social network had higher levels of interest in using a LARC in the future. Results in this study show that, simply being aware of others' LARC use was not related with initial LARC interest. However, knowing of other's negative LARC experience corresponded with a decrease in response toward being

interested in and not knowing of other's positive LARC experience corresponded to an increase in response toward not being interested in LARC. These results concur with previous studies in that social networks affect contraceptive decision making to the point that individuals specifically utilize or reject a method based on their social network's opinions and experiences (Costenbader et al., 2017).

Indeed, learning about others' experiences with LARC can help one to appraise contraceptive options considering potential outcomes, to the end that decisions are tempered and result in less regret since the information from others' experiences contained social and emotional information not usually available elsewhere. In sum, findings from this study suggest that increasing the pervasiveness of LARC information, experiential or not, may facilitate women's familiarity and comfort with this method. Moreover, familiarity and comfort with LARC methods may help translate knowledge to interest, and potentially subsequent use.

2.5.3 Limitations of Study 1

Some limitations must be noted in relation to study 1 of this dissertation. First, intention rather than behavior was utilized as the main dependent variable. Even though behavior change theories postulate intentions as the most proximal determinant of behavior, actual contraceptive behavior change, or information seeking were not measured. Thus, it is unsure whether the effects of the independent variables of interest (e.g., knowledge, social context, vicarious learning, norms, etc.) are actually predictive of LARC uptake.

2.5.4 Future Directions

Further research is needed to determine best practices for encouraging audiences to learn about different contraceptive methods besides the well-known birth control pill. Researchers should explore different attitudes that may better predict LARC use besides motivation to avoid unintended pregnancy. Indeed, women differ in their perceptions of how unintended pregnancy may affect their life. Studies have found that young women of color report perceiving multiple benefits to childbearing, including providing a purpose in life and someone to love, restoring self-confidence and fostering connection with partners and family more often than their White counterpart (Geist et al., 2019; Rose et al., 2008). In addition to motivation, fatalistic thinking may also affect pregnancy planning and prevention. It is possible that fatalistic beliefs influence women's willingness to make a conscious decision to prevent pregnancy from happening. For example, Jones et al. (2016) found that many women in their study expressed a fatalistic outlook, indicating that it was not possible or appropriate for pregnancy to be planned, as God (or destiny) have the ultimate power to decide when pregnancy occurs.

2.5.5 Conclusion

Regardless of the worries and hesitations from providers and individuals, the American College of Obstetricians and Gynecologists (ACOG) recommended LARC methods as first-line contraceptives for all women and adolescents due to their high efficacy in 2012, a recommendation reinforced by the American Academy of Pediatrics in 2014. Additionally, various studies have confirmed that LARC methods are safe and have high continuation and satisfaction rates (Diedrich et al., 2016; Hillard, 2013). Overall,

LARC are ideal for most women, especially young women who want to avoid pregnancy for three to ten years.

CHAPTER 3. STUDY 2 – CAMPAIGNS’ SOCIAL INFLUENCE IN AN AGE OF MASSPERSONAL COMMUNICATION

The communication field has historically delineated between mass and interpersonal communication, both conceptually and in its research and theoretical development (O’Sullivan & Carr, 2018). For instance, mass communication has been traditionally defined as one-way technologically mediated messages delivered to large audiences of individuals not known personally by the sender (Chaffee, 1982). Conversely, when attempting to define interpersonal communication one can find a plethora of contrasting opinions. Usually, interpersonal communication has been defined as two-way message exchange between a very small number (usually two) of participants who have personal knowledge of each other (Roloff, 2015).

A full exploration of what constitutes the breadth and depth of interpersonal interaction is beyond the scope of this dissertation. However, this study concurs with scholars who have been insisting that moving beyond the dyadic and face-to-face experience and placing interpersonal communication in a larger context would expand our understanding of how the environment affects interpersonal interactions; as well as how interpersonal communication highlights macro level patterns of information flow (Southwell & Yzer, 2007, 2009a, 2009b). Therefore, for the scope of this study, Southwell and Yzer (2007) definition, in which interpersonal communication is “a behavior that has real consequences and it occurs in diverse contexts” is borrowed (p. 1579).

Additionally, it is important to note that the definition of interpersonal communication this dissertation is based on is not solely focused on diffusion, in which exposed participants share the campaign’s message with unexposed individuals (Haider &

Kreps, 2004). Instead, in accordance with Southwell and Yzer (2009), *interpersonal communication can be any conversation among individuals (or exposure to others' conversations), in which experiences, feelings, or opinions about the health messages or health topics included in the campaign are shared*. These conversations may be encouraged in the campaign messaging, but they also may happen in informal, unmonitored conversations outside of the campaign setting.

Within the interplay of interpersonal communication and mass media campaigns, Kam and Lee (2013) argue that interpersonal communication concerns not only the interactions that individuals have with each other, but also how those interactions influence their choice and interpretation of media and how they in turn may have similar influences on others. For instance, interpersonal communication about contraception serves a number of specific functions, such as 1) a source of information to learn about contraceptive options (Valente, 1996); 2) a means to learn where to access contraceptive methods (Anderson et al., 2014); 3) a signal of social approval for contraceptive use (Ali et al., 2011b); and 4) a source of social support for adoption and continued use (Wright, 2016).

Given that we live in an era of interpersonal and mass communication convergence, scholars have focused on expanding the concepts around “masspersonal” communication to better represent the communicative processes of our daily lives. According to several reviews, the concept of masspersonal communication emerges from observations of instances when a) individuals use conventional mass communication channels for interpersonal communication, b) individuals use conventional interpersonal communication channels for mass communication, and c) individuals engage in mass

communication and interpersonal communication simultaneously (see O'Sullivan & Carr, 2018; Kreps, 2017).

To illustrate, Kreps (2017) discusses two ways in which the nature of health communication has changed since the convergence of mass and interpersonal communication. The first type of convergence of mass and interpersonal communication focuses on the use of information accessed through digital mass media and its subsequent discussion in interpersonal encounters. A variation of this type of convergence occurs when messages are designed for mass dissemination, but the content is intended to stimulate subsequent interpersonal communication. This form of convergence dates to pre-Internet research, with Rogers and the diffusion of innovation (Rogers, 2004). Notably, Rogers (2004) recommended combining mass and interpersonal communication channels in health campaigns so that mass media channels raise awareness about health behaviors while subsequent conversations reinforce and encourage those health behaviors.

The second type of convergence happens in the occurrence of interpersonal discussions about health topics in virtual discussion spaces (Kreps, 2017). In the age of new media channels and mobile technology, Rice (2017) reconceptualize communities as grounded in social networks, which can not only be supported by, but also extended in space, time, and type of relationships through online channels. Furthermore, Seo and Matsaganis (2013) argue that the use of mediated social networks can also foster social capital, which is the set of potential resources (e.g., information about LARC, access to services, instrumental and emotional support) embedded in social networks beneficial to the individual or the relevant social group. Previous research in health communication, social support, and computer-mediated communication have shown advantages of online

discussions (Flanagin, 2017; Lim et al., 2014; Maher et al., 2014; Ngenye & Wright, 2022). For example, Veale et al. (2015) found that individuals who engage in online health information interactions experience an increase in knowledge about their condition, have enhanced patient empowerment, and are more likely to be compliant with health care recommendations.

The main aim of study 2 is to extend the masspersonal literature by examining exposure to campaign talk (i.e., Reddit forum about LARC) and media messages (i.e., LARC campaign message) in the same context. Furthermore, study 2 examines the processes and outcomes of the incorporation of mass and interpersonal channels to promote information seeking, influence norms, social diffusion of health messages, and behavior change. The rest of this chapter overviews the scholarship around the interplay of health campaign messages and interpersonal communication, specifically theoretical frameworks that describe the influence of campaign-related talk in new media channels on health behaviors via social norms.

3.1 There's an App for That! The Case of Reddit

The internet, mobile health technologies, and applications (i.e., apps) present an opportunity to improve access and provision to comprehensive reproductive health information. For instance, content analyses examining reproductive and contraceptive information online have found that educationally-oriented sexual and reproductive material is readily available on the Internet (Allison et al., 2012). Additionally, social media accounts, blogs, and online magazines targeted towards young adults often feature articles on unintended pregnancy and contraceptive use (Guse et al., 2012; Levine, 2011). Likewise, there are websites with accurate, accessible information as well as opportunities

to obtain reproductive health information via chat rooms and email (Record et al., 2018; Silberman & Record, 2021; Ziebland & Wyke, 2012). Overall, Internet is an appealing source of sexual health information for young adults because it allows them to obtain the necessary information without embarrassment, intimidation, or the risk of having their partners or parents find out about their sexual health concerns (Black et al., 2018; Jones & Biddlecom, 2011a; von Rosen et al., 2017; Yager & O’Keefe, 2012).

However, in addition to the benefits, there are also disadvantages associated with the advancement of digital health communication channels that can have an adverse effect on young adults’ reproductive health. Notably, a major disadvantage of online health communication channels is the abundance of inaccurate or poor-quality health information available (Buhi et al., 2009; Eastin, 2001; Ghaddar et al., 2012; Skinner et al., 2003). Despite many health organizations having a clear stance on their recommendations for LARC as first-line contraceptives for all women, the information available on the Internet fails to convey this recommendation to its users.

Harris et al. (2016) suggest that the accuracy and quality of LARC information available on the Internet is highly variable. For example, Madden et al. (2016) found that while most sites stated the LARC were effective and long lasting, fewer than half of the sites stated that it was safe, and more than half incorrectly stated that LARC increased the risk of pelvic inflammatory disease, ectopic pregnancy, and infertility. Although Madden et al. (2016) found accurate information about LARC on many websites, this information was mixed with inaccurate information, especially in over-representation of contraceptive risk, that could perpetuate misconceptions about LARC and contribute to continued low use in the U.S. In fact, Gold et al. (2011) found that some websites go as far as to dissuade

teens from using LARC. Although these findings do not diminish the potential of the Internet to improve sexual and reproductive health education, it does suggest that the Internet may not be filling the sexual health information gap.

A shortcoming in the literature on online health information seeking and behavior change is the frequent focus on the Internet as a monolithic source of information. Hu and Sundar (2010) found that simple broad measures of Internet use and exposure may not adequately capture the diversity of health content online and the different effects it may have on individuals' subsequent behaviors. For example, there are several ways that sexual and reproductive health information can be presented on the internet. First, there are websites designed for the lay public that provide authoritative information about contraception (e.g., medlineplus, cdc.gov, pubmed central, etc.). Authoritative health information according to Yager and O'Keefe (2012), is based on scientific information, often presented as evidence-based "facts and figures" and is commonly seen on static traditional health information websites. Second, there are also interactive websites, social media, and mhealth programs that enable users to exchange messages, ask questions, and receive adaptive responses (Allison et al., 2012; Guse et al., 2012; Ito & Brown, 2010; Konijn et al., 2008; Levine, 2011; Wadham et al., 2019). Due to these differences, Flanagan (2017) argues that we cannot explore online information seeking or online effects on behavior by measuring the Internet as one cohesive source. In line with this recommendation, this study focuses on the online experience and information seeking behaviors in new media channels, specifically forums/bulletin boards (i.e., Reddit).

Online communities such as Reddit, both supplement and in some ways surpass authoritative health information. For example, Kim et al. (2016) found that Internet users

were less likely to change their health behaviors based on information sourced from traditional websites and blogs than that from chat forums/bulletin boards (e.g., Reddit, Quora, etc.). Likewise, Lim (2014) found that among the many forms of digital health communication sources, bulletin boards such as Reddit, are most popular because they are directly accessed through search engines, which most people use for locating online health information. Additionally, online communities allow others to hear or read about others' health experiences, which has been found to have the potential to affect health decision making, one's sense of isolation, and support (Allison et al., 2012; Gold et al., 2011; Kreps, 2017).

Studies have found that young adults perceive bulletin boards, such as Reddit, as valuable venues of personal opinions, actionable suggestions, and concrete information (Park & Calamaro, 2013; Veale et al., 2015). Moreover, online bulletin boards provide a shared, user-driven environment that facilitates and encourages users to collaborate in developing content, sharing information, and sharing and commenting on personal experiences (Lim, 2014; Oh et al., 2018). Thus, in accordance with Kreps (2017), interactive new media, such as Reddit, serve as a bridge between mass and interpersonal communication. As a result of this merger, new media is beneficial for sharing information, interacting, and making collaborative decisions that are essential communication processes for achieving health literacy, health promotion, and health behavior change goals.

3.2 Campaigns and Campaign Talk as Correlates of Health Behaviors

Southwell and Yzer (2009) declared, "There appears to be universal agreement on the idea that talk matters for campaign effects yet also remarkably few testable ideas about determinant factors in that relationship. It is not enough to know that talk matters; we also

need to know when and why” (pp. 1–2). Although the subject of interpersonal communication effects in the realm of mass communication health campaigns has not been totally ignored, it has only received limited and inconsistent attention (Southwell & Yzer, 2007, 2009; Yzer & Southwell, 2008). This is unfortunate as media messages are not consumed in a vacuum and these interpersonal interactions likely play a role in determining the persuasive effect of health campaign messages (Lee, 2009; Seo & Matsaganis, 2013). Nonetheless, health campaign researchers have become increasingly aware of the need to integrate and account for social networks and interpersonal relationships in health campaign interventions (Frank et al., 2012; Hendriks, van den Putte, de Bruijn, et al., 2014; Jeong & Bae, 2018).

In their meta-analysis examining the effect of mass media campaign-generated conversations on campaign-targeted health outcomes, Jeong and Bae (2018) describe that across studies, campaign talk has been found to be a predictor of attitude and behavior change. For example, those who engaged in campaign talk were more likely to quit smoking (Brennan et al., 2016; Dunlop, 2011), undergo a hearing test (Stephenson et al., 2009), reduced drug intake (Richards, 2014), have healthier eating habits (Boster et al., 2012), and have lower intention to engage in binge drinking (Hendriks et al., 2012, 2015; Hendriks, van den Putte, & de Bruijn, 2014). Although these studies illustrate how campaign talk can influence health outcomes, explanations for these effects remain unclear.

When investigated as a variable in campaign effects research, interpersonal communication (referred to as campaign talk moving forward), has not been uniformly defined or measured (Choi et al., 2017; Dunlop et al., 2010; Hornik, 2016). For example,

in the meta-analysis previously discussed, Jeong and Bae (2018) did not provide the definitions of interpersonal communication that were used across the included studies. Previous studies investigating campaign talk have simply stated their interest in conversations or interpersonal discussions resulting from campaign exposure without describing a clear definition to any of these terms (Dunlop et al., 2008; Robbins & Niederdeppe, 2015).

Additionally, previous studies have primarily measured campaign talk through self-reports, asking participants if they had discussed with others about the campaign topic or messages (Francis et al., 2021; Helme et al., 2011; Morgan, Southwell, et al., 2018). Moreover, researchers have failed to gather descriptive information of campaign talk, such as the length and valence of the discussion or with whom the discussion took place, leaving only occurrence of campaign talk as their main independent or dependent variable. Southwell and Yzer (2007) argue that the lack of conceptualization and uniformity in measurement of campaign talk presents a major limitation when drawing conclusions about the role of campaign talk on health behaviors.

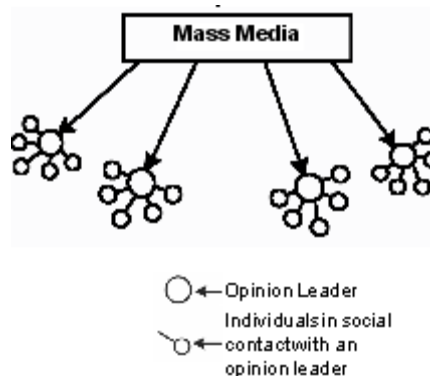
This study aims to expand the theoretical foundation around the interplay between health campaigns, social diffusion, and behavior change. David et al. (2006) hypothesized the role of campaign talk in intensifying, mitigating, or reversing the campaign message's effects by arguing that the effects of campaign talk depend on: a) Will the message, once received, produce conversation among members of the target audience?; b) Who will be the most likely communicators?; c) Will those most likely to communicate be those disposed toward producing communication favorable toward the message or those opposed

to it?; and d) Under what conditions will campaign talk (positive and negative) influence other's beliefs, attitudes, social norms, or intentions? Such questions drive Study 2.

3.3 Theoretical Mechanisms Driving the Effects of Campaign Talk

The importance of campaign-related conversations in increasing the reach and frequency of campaign messages has been a research topic of interest dated back to classical communication theories, such as the two-step flow model of communication (Katz, 1957) and the diffusion of innovation theory (DOI) (Rogers, 2004). Both these theories posit the idea that interpersonal conversations can deliver and enhance campaign messages. The mass communication theory of the two-step flow model (Katz, 1957) describes how firstly, certain individuals considered to be “opinion leaders” receive and interpret information directly from mass media. They in turn pass on their interpretations along with the media information itself, thus influencing their subject's interpretations (see Figure 1 for model). The two-step flow model is considered to be an explanation for understanding how mass media influences decision-making and public opinion, and how, occasionally, media campaigns can fail to change their audience's attitudes (Katz, 1957; Southwell, 2017).

Figure 3.1 The Two-Step Flow Model of Communication.



Moreover, the diffusion of innovation theory (DOI) provides a conceptual lens to explore social change, especially around how innovations spread over communication channels, which include mass media channels and interpersonal communication channels. Developed by Rogers in 1962, diffusion of innovations theory explains how, why, and at what rate new ideas and technology spread. Diffusion is the process by which individuals communicate with others, over time, about an innovation. Rogers (2004) proposes four key factors that are needed for diffusion: an innovation, communication channels (mass media and interpersonal), a social system, and time. An innovation is a new idea, behavior, product, or technology. An innovation does not have to be a new invention, but it has to be new to the targeted group. The end result of diffusion is a social system adopting an innovation.

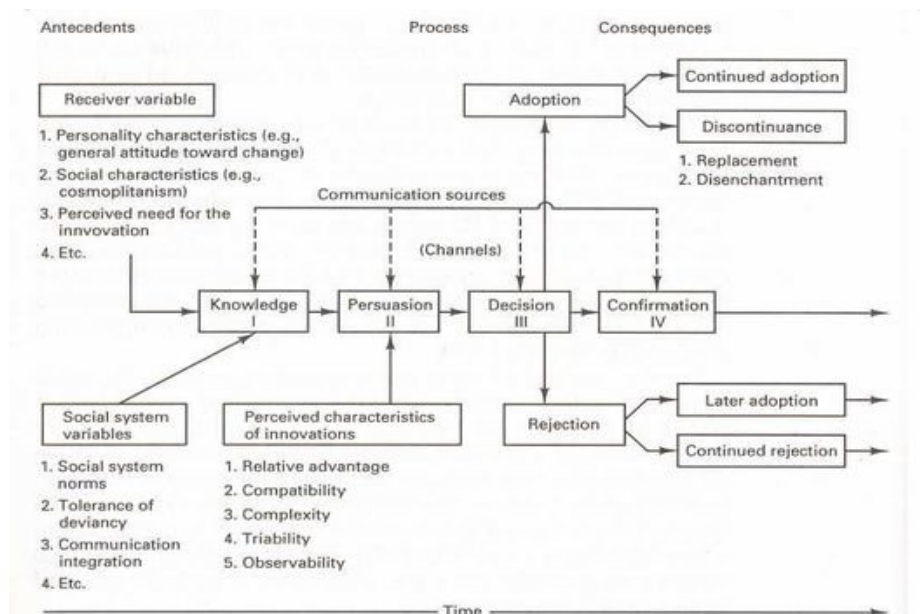
Diffusion of innovations theory assumes that trends and behaviors are started by a specific group of people, the opinion leaders. Once the opinion leaders accept and perform a certain behavior, the behavior then diffuses throughout the population, persuading others into joining such behavior (Rogers, 2004). A key component of this theory are the change agents, who are the opinion leaders disseminating the innovation. The adopters' opinion of the innovation is important to its dissemination, and the interpersonal interactions between adopters and opinion leaders stimulates the adoption process.

Rogers (2004) explained that the innovation-decision process involves five stages: knowledge, persuasion, decision, implementation, and confirmation (see Figure 2 for DOI model). During the knowledge stage, individuals learn about the innovation by searching for information to gain an understanding of the innovations function, benefits, costs, or any information that will reduce uncertainty. Haider and Kreps (2004) argue that public health

scholars or officials should capitalize on this stage by focusing on the spreading of information through mass-media channels as a way to introduce the innovation to a community.

During the persuasion stage, individuals will form a favorable or unfavorable attitude towards the innovation. Additionally, in the decision stage, individuals will seek help from others to form an evaluation about the advantages and disadvantages regarding their own situations. Haider and Kreps (2004) argue that scholars should also focus on the interpersonal channels of communication during these stages, as early adopter could convince late adopter and laggards to adopt the innovation. If individuals decide to adopt the innovation they will move to the implementation stage, where they will use or perform the innovation. In the final stage of confirmation, individuals will seek for reinforcement for their decision, this process can happen through interpersonal channels. During this stage, individuals will decide to continue or stop the adoption of the innovation.

Figure 3.2 Diffusion of Innovation Model.



According to Valente and Rogers' (1995) meta-analysis, studies grounded in the diffusion of innovation had been based toward answering the following research questions: what variables are related to innovativeness? What is the rate of adoption of an innovation? What factors explain the rate of adoption? And what role do different communication sources/channels play at various stages in the innovation-decision process? The questions at hand represent the philosophical and theoretical foundations of the diffusion of innovation theory.

Haider and Kreps (2004) argue that, although mass media continue to be an integral component of DOI in the practice of health promotion, interpersonal communication channels provide a more persuasive means of diffusing an innovation. Rogers (2004) concurred with this statement, acknowledging that interpersonal communication drives the diffusion process by creating a critical mass of adopters. Moreover, Valente and Fosados (2006) delineated how DOI can integrate mass media, interpersonal communication, and social network analysis to explore how campaign messages get filtered through an individual's social network and influence the interpretation of the message and its subsequent behaviors. They argue that as a person moves through the stages of adoption, interpersonal influences become increasingly important, superseding messages disseminated by the mass media; and as the complexity of the innovation increases, individuals rely on interpersonal communication to reduce uncertainty. Hence, this study is grounded in DOI to describe how new media channels relate to masspersonal communication and how they impact social influence.

3.3.1 The Social Diffusion Model

In their seminal piece, Hornik and Yanovitzky (2003) describe three general paths through which media campaigns may influence behavior. First, individuals can experience direct exposure of the campaign messages through ads placed in the media, educational programs, or other forms of mass distribution. As a result of this exposure, individuals may learn new information, gather more information, or even acquire the skills necessary to perform or avoid a certain behavior. Consequently, according to behavior change theories, individuals will develop positive or negative behavioral intentions that are eventually translated into actual behavior (Fishbein & Ajzen, 2011; Krebs et al., 2010; Prochaska et al., 2008; Prochaska & Velicer, 1997; Slater, 1999). The second path concerns the diffusion of campaign themes through other social institutions, such as the mass media, the executive and legislative branches of government, the justice and law enforcement system, and religious organizations. Through this path, people who were not previously exposed to the campaign directly may learn about the message or topic through their interaction with leaders of their community (i.e., pastor, teacher, governor, etc.). Finally, the third path concerns the social diffusion of campaign themes through social interactions with close others in our social network. Recent studies testing the social diffusion model suggest the impact of campaign exposure on an individual's dispositional variables and behaviors is mediated by the individual's social interactions or conversation with others (David et al., 2006; Hornik, 2016; Hwang, 2012). This study is grounded on this third path of campaign exposure.

According to Yanovitzky and Stryker (2001), the social diffusion of campaign messages may influence the audience in two ways. In both cases, the characteristics of

one's social networks will either complement and amplify the transmission of campaign messages to individuals or hamper persuasion and social influence efforts. First, secondary diffusion of messages may occur when the campaign prompts those who are exposed to transmit its messages to those who were not exposed or attentive to the same messages. Second, the campaign may stimulate discussions among family members, peers, and other members of the community through which social norms and expectations concerning the underlying behavior are clarified. For example, during their intervention to promote family planning in Nepal, Boulay et al. (2002) found that 40% of those who were not directly exposed to the campaign were indirectly exposed to the message via interpersonal communication. Boulay et al. (2002) explain that these normative perceptions help individuals understand the nature and strength of others' beliefs and others' expectations of them (e.g., whether others expect them to hold similar beliefs).

3.3.2 Testing a Social Diffusion Model of Campaign Influence

Based on the secondary diffusion (Hornik, 2004; Hwang, 2012) and social influence function of conversations (Hwang, 2016; Noar et al., 2009; Van Den Putte et al., 2005), the social diffusion model posits that campaign activity can influence a person's perception or behavior, not only because the person is exposed to the campaign but also because the person engages in campaign-related conversation. The model suggests that although campaign messages may provide some sense of the normative perceptions with regard to a certain behavior, it is through conversations that individuals can gain a more accurate perception of the prevalence of a particular behavior (i.e., descriptive norms) and realize the level of approval or disapproval regarding that behavior (i.e., injunctive norms). Jeong and Bae (2018) posit that campaigns may act as a conversational prompt and lead

individuals to find out that others support particular health behaviors more than they originally supposed and then, as suggested by behavior change theories, these normative perceptions can then affect attitudes, intentions, or behavior. Therefore, at its core, the social diffusion model suggests the impact of campaign activity on a person's behavior is conveyed through the person's social interaction or conversation with others.

However, social diffusion studies have failed to test one of the key constructs of this model: **interpersonal communication**. A test of the interpersonal communication component, however, is critical in the test of the social diffusion model, because the social diffusion model suggests that the impact of a campaign is mediated by a person's interpersonal communication with others. For example, although Hornik and Yanovitzky (2003) found that increased news coverage of binge drinking affects the perceived peer approval of the behavior, they were not able to determine whether the source that causes changes in normative perceptions is interpersonal conversation.

A better understanding of the role of conversational occurrence about LARC media messages requires research on the factors that influence conversational occurrence and its relationship with attitudes, self-efficacy, normative perceptions, and intentions. In response, the purpose of this study is to examine the influence of campaign talk on attitudes, perceived norms, self-efficacy, and intention, specifically as it relates to seeking information and adopting a LARC. However, there is a caveat: *in this study, the conceptualization and measurement of interpersonal communication regarding health topics (in this case LARC uptake) can also occur in a passive form, where individuals are exposed to others' conversations and experiences about the health topic but don't*

necessarily participate in the conversation, a notion that has largely been ignored in previous studies.

Passive exposure to conversations is very common in new media, especially Reddit, where individuals can read a thread of comments and conversations among users and decide whether to participate or not. In support of this notion, (Dunlop et al., 2010) posits that pure diffusion notions do not sufficiently account for all conversations relevant to mediated information. They cautioned against assuming that interpersonal interaction always acts as a diffusion mechanism, suggesting that interpersonal communication can be related to key variables such as knowledge without necessarily serving as a link through which new information flows. Therefore, this study investigates the potentially mediating role of exposure to campaign talk through new media.

Moreover, a current gap in the literature revolves around previous studies only investigating the moderating and mediating roles of campaign talk by using correlational survey designs. Jeong and Bae (2018) argue that using correlational survey designs makes it difficult to make causal attributions that ascertain potential mediation or moderation effects. For example, we would not be able to assess whether campaign talk actually impacts the effectiveness of the campaign on behavioral intentions, or if those who already intended to change are just more inclined to engage in campaign talk. Therefore, one of the main purposes of this experimental survey design study is to provide an integrative understanding of the interplay between health campaigns, campaign talk, and normative influences. To do so, two processes of the social diffusion model of campaign influence are tested: the prediction of campaign-related talk and the mediating role of conversation of intentions.

3.4 Part 1: Predicting Campaign Talk: The Role of Message Evaluation

Previous studies testing the social diffusion of campaign influence have mainly examined the effects of campaign induced conversations, meaning conversations that occur after health campaign exposure (Brennan et al., 2016; Dunlop, 2011, p. 2011; Hall, 2012; Kam & Lee, 2013). However, there is a chance that before health message exposure people had already been exposed to or have talked to others about the campaign topic. Thus, Hendriks et al. (2014) argue it is possible that health campaign exposure affects already existing communication patterns, instead of solely triggering conversations. However, this study proposes campaign exposure may still influence or predict the valence and content of intended conversations, which in turn may influence the effect campaign talk has on health variables. Therefore, this study proposes that campaign exposure triggers individuals to undergo cognitive processes (i.e., message evaluation) that may impact 1) individuals' willingness to engage in campaign talk and 2) the conversational valence of intended talk (see Figure 3 for proposed model).

First, based on previous studies on social influence and campaign effects (Francis et al., 2021; Morgan, Southwell, et al., 2018; Seo & Matsaganis, 2013; Stephenson et al., 2009; Van den Putte et al., 2011), the proposed model posits that exposure to campaign messages (i.e., LARC campaign video) will trigger individuals to think and elaborate about the messages. This elaboration in turn will create positive or negative thoughts about the campaign message and LARC in general. Additionally, based on acceptance as a measure of perceived message effectiveness (PME), individuals will evaluate the message based on their perceived message effectiveness and argument strength (M. Kim & Cappella, 2019).

Additionally, the model proposes biased processing as a factor that affects message evaluation ratings. Based on tenets of the elaboration likelihood model (ELM; Petty & Cacioppo, 1986), biased processing refers to prior attitudes and dispositions of receivers in the target audience leading them to favor (or oppose) claims in messages before centrally processing the message (Cyr et al., 2018; Judge & Borrero, 2017; Rader, 2020). Thus, as it relates to contraceptive decision making and LARC uptake, this study posits that motivation to prevent unintended pregnancy, previous awareness about LARC, knowledge levels about LARC, and awareness of others' LARC experiences may activate biased processing and influence campaign message evaluation ratings. Therefore, to assess the cognitive processes of the proposed model of social diffusion of campaign influence, the following overarching research question is proposed:

RQ6: Do a) motivation to prevent unintended pregnancy, b) previous LARC awareness, c) awareness of others' LARC experiences, and d) LARC knowledge levels influence message evaluation of the LARC video?

Second, behavioral willingness, specifically willingness to engage in LARC talk is measured outcome in this study. Behavioral willingness is an openness to engage in behaviors and which is related to but different from intention (Comello & Slater, 2011). To elaborate, whereas intention is a product of deliberative thought, willingness can be characterized as reactivity to cues that may be present in situations. Prior work demonstrates that while willingness is correlated with intention, willingness predicts behavior independent of intention (Comello, 2011; Comello & Slater, 2011).

Willingness is an appropriate measure for this model because individuals tend to be exposed to campaign messages in a passive and non-deliberative way, therefore, they

may not undergo high elaboration to determine whether they might engage or not in talk about the campaign. Furthermore, intention can be too broad of a term when investigating behaviors that would require less effort. For example, if prompted to imagine a future scenario, individuals may say that they do not *intend* to converse about LARC with others but may nevertheless be *willing* to engage in LARC talk if they found themselves in an environment that made it conducive to having this conversation.

Moreover, it is important to note that conversational occurrence (i.e., whether people talk about the campaign or campaign topic) differs from conversational valence (i.e., whether people converse positively or negatively about the campaign or campaign topic). Although these concepts are related, the fact that message evaluation may affect conversational occurrence does not necessarily imply that message evaluation may also affect conversational valence. Indeed, it would make sense to think that if individuals were to engage in campaign talk, individuals who have positive thoughts toward the campaign message or LARC will engage in positive conversational valence. The opposite would be true for those individuals who have negative thoughts. However, little is known about the factors that determine the occurrence and content of campaign talk. Thus, to test these assumptions, the following hypothesis and research question are proposed:

H5: Campaign message evaluation influences participant's willingness to engage in LARC talk, such that participants who positively evaluate the message are more willing to engage in LARC talk than participants who negatively evaluate the message.

RQ7: Is intended conversational valence about LARC influenced by a) previous LARC awareness, b) awareness of others' LARC experiences, and c) LARC knowledge levels?

3.5 Part 2: The Mediating Roles of Campaign Talk and Conversational Valence

In addition to investigating the interplay between conversational occurrence and campaign influence, we must also investigate how the content of conversations may impact the persuasion process. For instance, Jeong et al. (2015) conducted a study looking into anti-smoking campaigns and conversational occurrences and found that talking about the actual campaign message was not predictive of participants making attempts to quit smoking, however, talking about quitting and seeking social support were related to quit attempts. Thus, it appears that conversations should focus on the targeted health issues instead of the actual campaign message to be successful. Moreover, in a non-experimental setting, individuals who learn about the campaign through secondary diffusion are more likely to talk about the campaign topic rather than the actual campaign message (Brennan et al., 2017; Jeong et al., 2015; Jeong & Bae, 2018; Lee & Hornik, 2007; Southwell & Yzer, 2009b).

Although research has shown that whether people talk about health issues or not influences health campaign effects, limited evidence exists on whether conversational valence fulfills a mediating role within health campaign effects. Previous studies have alluded that conversational valence about health messages can be predictive of attitudinal and behavioral outcomes (Hendriks et al., 2012; Hendriks et al., 2015; Heniks et al., 2014). For example, in their study about HIV prevention through PSAs, Frank et al. (2012) found that positive discussions of PSAs that were supportive of condom use predicted positive

attitudes towards condom use, increased self-efficacy, and led to more positive perceptions of subjective and descriptive norms. Moreover, in their study on smoking cessation, Brennan et al. (2017) found that when conversations about the campaign were positive, intentions to quit smoking were high. However, when the conversations about the campaign were negative, participants reported lower intentions to quit smoking.

The effects of campaign talk on behaviors are represented through the components of behavior change theories previously discussed (Jeong et al., 2015; Kam & Lee, 2013; Lee, 2009). Theoretical frameworks of health behavior change guide this study to focus on the impact of campaign talk on behavioral beliefs, social normative beliefs, and efficacy beliefs as mediators of impact on intention and behavior (Fishbein & Ajzen, 2010). Overall, research has found that the content and valence of campaign talk can influence 1) the beliefs about the behavior targeted by the campaign (i.e., LARC uptake); 2) normative beliefs about the behaviors (i.e., subjective norms surrounding LARC uptake); or 3) beliefs about how easy or difficult it would be to stop or initiate the behavior (i.e., self-efficacy surrounding LARC uptake). Therefore, in the context of LARC uptake, this study tests the effects of conversational valence on intentions to seek information about LARC and on proximal variables of health behavior (i.e., LARC use). To do so, the following hypotheses are proposed:

H6: Exposure to positive LARC talk in an online mediated setting will elicit higher intention to seek more information about LARC than exposure to negative LARC talk.

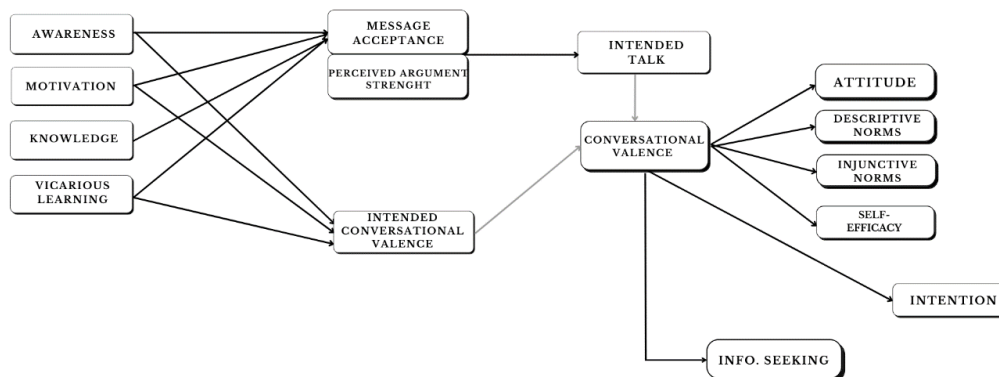
H7: For non-LARC users, exposure to positive LARC talk in an online mediated setting will elicit more positive a) attitudes toward LARC, b) descriptive norms, c)

injunctive norms, and d) higher self-efficacy surrounding LARC uptake than those exposed to negative LARC talk, which in turn will elicit higher intentions to adopt a LARC.

3.6 Summary, Research Questions, Hypotheses, and Proposed Model for Study 2

Utilizing the explicit definition of interpersonal communication under investigation and use of experimental methods, Study 2 aimed at strengthening the advancement of the conceptual foundation regarding the social communication about campaign topics. Using a sample of young adult women, this study examines the influence of social learning and LARC knowledge in the evaluation of campaign messages (**RQ6**). Moreover, this study tests whether such evaluations influence the generation (**RQ7**) and diffusion (**H5**) of campaign influence. Additionally, an examination of how exposure to negative or positive online LARC talk (i.e., Reddit forum on LARC experience) influences intentions to a) seek information (**H6**) and b) adopt LARC (**H7**) via three major constructs of cognition about behavior: attitudes, perceived norms, and self-efficacy, specifically, relating to LARC uptake. The proposed conceptual model in Figure 3 below shows the relationship between health campaigns, campaign talk, and determinants of health behavior that are investigated in this study.

Figure 3.3 Proposed Conceptual Model.



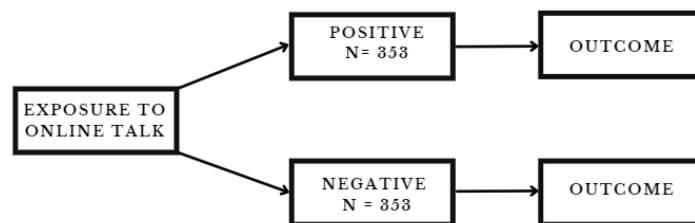
3.7 Study 2 Methodology

Study 2 had three aims related to predicting campaign talk: 1) identify determinants that may influence women’s willingness to engage in LARC talk with others after campaign exposure; 2) explore covariates that may influence campaign message evaluation ratings and subsequent willingness to engage in LARC talk; 3) examine factors that may influence the potential valence of intended LARC talk. Moreover, Study 2 had two aims concerning the theoretical advancement on the influence of campaign talk on health behavior: 1) test the social diffusion model of campaign influence with the added construct of conversational valence in the context of LARC uptake; 2) test if conversational valence of LARC influences behavioral intentions to adopt LARC through attitudes, perceived norms, and self-efficacy; and 3) examine if LARC talk and conversational valence mediate future information seeking behaviors and behavioral intentions to adopt LARC.

3.7.1 Experimental Design

There were two treatment groups in a between-subjects post-only experimental design. The factor of interest was the conversation valence of the Reddit forum. The first condition was an online forum where the messages from users were positive. The second condition was an online forum where the messages from users were negative (see Appendix 3 for materials). The study design is outlined in Figure 4 below, illustrating subjects nested within conditions.

Figure 3.4 Experimental Design.



3.7.2 Materials

To expose participants to a LARC campaign, an existing LARC campaign video was embedded within the Qualtrics survey. The video that was utilized is a promotional video from Planned Parenthood that overviews the IUD and the Implant. Moreover, a mediated forum experience (i.e., Reddit forum) was used as the stimulus for the experiment. The online forum was a screenshot image of a Reddit embedded within the Qualtrics survey. Since there were two conditions in this experiment (positive valence x negative valence), there were two different Reddit forums. The forums were aesthetically identical and contained posts similar in length, the only difference was the content and valence of the posts. The image of the online forums can be found in Appendix 3.

3.7.3 Sampling Procedure

Inclusion criteria for participants included: 1) being between the ages of 18 and 30 years old; 2) be sexually active; and 3) identify as either a biological woman or cis-woman who engages in sexual activities with either biological men or cis-men regardless of their sexual orientation (e.g., heterosexual, bi-sexual, pansexual, demi-sexual, etc.). Participants who were abstaining from sexual activities were excluded from participating.

Accounting for attrition rates and projecting a power estimate for necessary analysis, a sample of 258 participants was desired for this study. These numbers were derived from a power analysis conducted using G*Power, which found that, in order to conduct the proper analyses for this study with a moderate effect size ($\alpha = 0.05$, $\beta = 0.5$), a sample size of at least 198 participants (99 participants in each condition) was needed. Factoring in the expectation of a minimum 30% attrition rate, a minimum of 258

participants completing the study allowed for the chosen analyses to be run and to have appropriate statistical power.

3.7.4 Procedure

After the completion of Study 1, the same participants who met the inclusion criteria were part of an online experiment to examine how LARC campaign exposure and subsequent message evaluation influence conversational occurrence and valence about LARC and to test the influence of campaign talk on intention to seek LARC information and intention to adopt LARC (i.e., Study 2).

To avoid any priming or bias among participants, instead of presenting the experiment's focus as the role of conversations in contraceptive behavior change, the experiment was introduced to the participants as a study concerned with how women evaluate a current campaign about contraceptive methods. The study could not be carried out without deception because if the full purpose of the research were disclosed to participants, it would bias their responses and invalidate the results. Therefore, to allow transparency, this sentence was added to the consent form: "So as to avoid biasing your responses, the purposes of some procedures in the study will not be disclosed to you until the study is over, at which point you will be provided this information and be given the opportunity to decide if you wish to allow the researchers to retain and use your responses."

3.7.5 Participants

A total of 1024 participants began the study. Any response from individuals who did not meet the criteria as well as any incomplete responses were removed from the analysis. Furthermore, participants who did not spend an adequate amount of time completing the study or rushed through clicking the same response were removed from the

sample. Finally, Z-scores were calculated for each scale used in the survey to identify participant responses that were outliers (i.e., answering outside of one standard deviation of the mean across all items). This resulted in 836 participants in the final sample and a 18% attrition rate.

In terms of demographics, participants were all female ($n = 706$). Participants identified their sexual orientation as either heterosexual ($n = 625$), bisexual ($n = 62$), pansexual ($n = 10$), or other ($n = 9$). Participants were also predominantly white ($n = 589$), followed by Black or African American ($n = 56$), Biracial ($n = 41$), Asian ($n = 17$), and American Indian or Alaskan Native ($n = 3$). Moreover, 36 participants identified as Latinx or Hispanic. The age of participants ranged from 18 to 30 years old ($M = 19.2$ years, $SD = 2.06$).

After participants completed the questionnaire in study 1, they were exposed to the stimuli video, which is a 2-minute video from a Planned Parenthood LARC campaign that was embedded within the Qualtrics survey. After seeing the video, participants answered questions assessing their message evaluation of the video, their willingness to talk about the topics of the campaign with others, and if they did, what kind of conversation (positive or negative) they would have. For a detailed look at the first part of the survey, refer to Appendix 1. After participants completed the questionnaire regarding the campaign video and willingness to talk, they were divided into two conditions (positive x negative online forum). After being assigned to the conditions and reading the forum, participants answered questions assessing their attitudes, normative beliefs, self-efficacy beliefs, intention to seek more information, and intention to adopt LARC. For a detailed look at the second part of the survey, refer to Appendix 2.

3.7.6 Measures for Study 2

The measures for demographic information and behavioral intention used in this experiment have already been covered in Study 1 (e.g., motivation to avoid unintended pregnancy, LARC awareness, LARC knowledge, social context, intended information seeking behaviors, LARC attitudes, norms, self-efficacy, and intentions to adopt LARC).

3.7.6.1 Message Evaluation

This study focused on acceptance as a measure of perceived message effectiveness (PME) by using Kim and Cappella's (2019) message testing protocol. Moreover, perceived argument strength (PAS; Zhao et al., 2011) was used as a second measure for persuasion effectiveness that focuses on argument quality. Following Zhao et al. (2011), and Kim and Cappella (2019) scale testing, need for cognition was not measured as it should not influence the assessment of argument strength because it only affects level of elaboration. These two constructs were used to assess campaign-message evaluation since PME focuses on ratings of whole, intact, often "real world" messages, whereas PAS focuses only on the argumentative content of the message, textual, or visual.

Perceived effectiveness of the video message was measured using items from Zhao et al.'s (2011) validated argument strength scale, such as "The video presented arguments or stories that were believable"; "The video presented materials and resources that were convincing"; "The video helped me feel more knowledgeable about LARC." Perceived acceptance of the message was measured using items from a scale of perceived message effectiveness that has been validated in the literature (Zhao et al., 2011), such as "Overall, how much do you agree or disagree with the information in the video." Participants provided levels of agreement from 1 (strongly agree) to 5 (strongly disagree) for all items.

The responses were then averaged for a single scale with high reliability ($M = 3.2$, $SD = 1.81$, $\alpha = .78$).

3.7.6.2 Willingness to Talk

To measure willingness to engage in future LARC talk, participants were asked to imagine different scenarios and decide how likely it would be for them to engage in conversations about LARC. The scenarios involved were: “I would tell a friend, family member, or close other to get a LARC if I thought they were thinking about changing birth control methods”; “If I knew someone was unhappy with their birth control method I would tell them about LARC”; “I will bring up LARCs next time I see my medical provider”; and “If I am in a group of people and they are discussing sexual health topics, I am likely to bring up LARC.” Participants responded to a 5-point scale from 1 (very likely) to 5 (very unlikely). After checking for reliability ($\alpha=.78$), a composite score for willingness to talk was then calculated by averaging the individual items ($M=3.76$, $SD=1.81$).

3.7.6.3 Intended Conversational Valence

To measure the valence of intended LARC talk participants answered the question “If I were to discuss LARCs with someone, I would mostly say positive (negative) things about LARC”. Responses were given on a 5-point scale from 1 (very likely) to 5 (very unlikely) then re-coded so that negative responses indicated intention to engage in negative LARC talk while positive values indicated intention to engage in positive LARC talk. The scores for these two questions were averaged so that the total score reflected a general measure of the intended conversational valence, with higher scores indicating intention to engage in more positive LARC talk ($M=3.88$, $SD=1.14$, $\alpha=.82$).

3.7.6.4 Covariates

Analyses included motivation to prevent unintended pregnancy, LARC awareness, LARC knowledge levels, and social contexts as covariates. Measures for these constructs can be found above in Chapter 2.

3.7.7 Data Analysis Plan for Study 2

Multiple linear regression was used to test: 1) if motivation to prevent unintended pregnancy, previous LARC awareness, awareness of others' LARC experiences, and LARC knowledge levels significantly predicted message evaluation ratings of the LARC campaign video (RQ7); 2) if message evaluation ratings significantly predicted participants' willingness to engage in future LARC talk (H5); and 3) if awareness of others' LARC experiences, previous awareness, and knowledge significantly predicted the conversational valence of intended LARC talk (RQ8).

Multiple linear regression was also used to test 1) if exposure to positive or negative conversational valence significantly predicted intention to seek information about LARC (H6); and 2) if exposure to positive LARC talk in an online mediated setting will elicit more positive attitudes toward LARC, descriptive norms, injunctive norms, and higher self-efficacy surrounding LARC uptake (H7). Finally, Spearman's rank correlation was computed to assess the relationship between attitudes toward LARC, descriptive norms, injunctive norms, self-efficacy, and intentions to adopt LARC among non-LARC users (H8). All analyses were conducted using R Statistical Software, version 4.0.

3.8 Results of Study 2

Study 2 explored the determinants of participants' willingness to engage in LARC talk after campaign exposure and examined factors that influenced the potential valence of such intended LARC talk. Overall, motivation to prevent unintended pregnancy, LARC

knowledge levels and awareness of others' LARC experiences significantly predict message evaluation. Moreover, positively evaluating the campaign message, specifically in the message acceptance construct, LARC knowledge levels, and awareness of others' positive LARC experiences were related to intentions to engage in future positive LARC talk. Additionally, this study assessed the relationship between the direct behavioral construct (i.e., attitudes, norms, self-efficacy) and intentions to seek information and adopt LARC among non-LARC users by testing conversational valence of LARC talk as a factor influencing direct behavioral construct. Results show that exposure to positive LARC talk does not predict intentions to seek more information about LARC. However, being exposed to a positive conversation about LARC significantly predicted positive attitudes toward LARC, perceived descriptive norms, and intentions to adopt LARC in the future compared to being exposed to a negative conversation about LARC (see Figure 5 for results of proposed model).

3.8.1 Predictors of Campaign Message Evaluation

RQ6 asked about the possible factors influencing message evaluation ratings of the LARC campaign video. To answer this question, multiple linear regression was used. Only participants that were categorized as non-LARC users ($n = 706$) responded to this question. Table 7 displays regression results from a regression using motivation to prevent unintended pregnancy, awareness of others' LARC experience, previous awareness, and knowledge as independent variables predicting campaign message evaluation (dependent variable). Results showed that motivation to prevent unintended pregnancy predicted message evaluation ratings in the acceptance ($\beta = -.47, p < .01$) and argument strength constructs ($\beta = 1.09, p = .003$). Being aware of LARC methods was not related to either of

the constructs of message evaluation ($\beta = .29, p = .18; \beta = .10, p = .39$). Moreover, low LARC knowledge levels significantly predicted negative message evaluations; both in the acceptance ($\beta = -.06, p = .003$) and argument strength constructs ($\beta = -.06, p = <.0001$). Additionally, being aware of network's use of LARC did not predict message evaluation ratings in either of the constructs ($\beta = .16, p = .25; \beta = .29, p = .07$). However, individuals who were aware of others' negative LARC experience tended to evaluate the campaign message poorly, but only in the message acceptance construct ($\beta = -.18, p = .05$). Finally, individuals who were aware of others' positive LARC experience significantly evaluated the campaign message positively, both in the acceptance ($\beta = .37, p = .02$) and argument strength variables ($\beta = .48, p = <.001$).

Table 3.1 Regression of Predictors of Message Evaluation.

	Message Evaluation (Acceptance)		Message Evaluation (Argument Strength)	
	β Estimate [95% CI]	p-value	β Estimate [95% CI]	p-value
Motivation to prevent unintended pregnancy	-.47 [-.83, -.1]	.01*	1.09 [.37, 1.81]	.003*
LARC Awareness	.29 [-.14, .72]	.18	.10 [-.13, .33]	.39
Knowledge Score	-.06 [-.1, -.02]	.003*	-.06 [-.09, -.03]	< .0001***
Awareness of others' LARC Use - No	.16 [-.11, .43]	.25	.29 [-.03, .61]	.07
Awareness of others' LARC Use - Unsure	.29 [-.03, .61]	.07	.46 [.03, .9]	.04
Know others' positive experience - No	.37 [.06, .68]	.02*	.48 [.19, .76]	.001**
Know others' positive experience - Unsure	.04 [-.16, .25]	.67	.35 [.07, .63]	.01*
Know others' negative experience - No	-.18 [-.37, 0]	.05*	-.13 [-.26, .01]	.06
Know others' negative experience - Unsure	.02 [-.22, .26]	.85	-.23 [.56, .1]	.18

* Results were calculated by comparing no/unsure responses to yes responses.

3.8.2 Predicting Campaign Talk

Hypothesis 5 proposed message evaluation ratings predict participants' willingness to engage in future LARC talk. To test this hypothesis, multiple linear regression was used. Only participants that were categorized as non-LARC users (n = 706) responded to this question. Table 8 displays regression results from a regression using message evaluation ratings, both message acceptance and argument strength constructs, as independent variables and willingness to talk to family, friends, or medical provider as dependent variables.

Results showed that participants who evaluated the campaign message positively were more likely to intend to talk to their family members and friends about LARC than participants who evaluated the message negatively, both in the message acceptance ($\beta = .44, p = .03$) and perceived argument strength construct ($\beta = .67, p < .0001$). Similar results were found for intentions to talk to a medical provider, participants who evaluated the campaign message positively were more likely to intend to talk to a medical provider, than participants who evaluated the message negatively, both in the message acceptance ($\beta = 2.14, p < .0001$) and perceived argument strength construct ($\beta = 2.43, p < .0001$).

Table 3.2 Regression of Message Evaluation as Predictor of Campaign Talk.

Message Evaluation	β Estimate [95% CI]	p-value
	Willingness to Talk to Family or Friend	
Acceptance	.44 [-.85, -.04]	.03*
Perceived Argument Strength	.67 [.43, .92]	< .0001*
Willingness to Talk to Doctor		
Acceptance	2.14 [1.82, 2.46]	< .0001*
Perceived Argument Strength	2.43 [1.91, 2.95]	< .001*

RQ7 asked about the role of a) previous LARC awareness, b) awareness of others' positive or negative LARC experiences, and c) LARC knowledge levels in predicting the conversational valence of intended LARC talk. Only participants that were categorized as non-LARC users ($n = 706$) responded to this question. Multiple linear regression was used to test the influence of the independent variables on intended conversational valence (see Table 9 for detailed results).

Results showed that being aware of LARC methods did not significantly predicted intended positive conversational valence (not aware v. aware $\beta = .102$, $p = .474$; unsure v. aware $\beta = .314$, $p = .107$) or intended negative conversational valence (not aware v. aware $\beta = .28$, $p = .08$; unsure v. aware $\beta = -.19$, $p = .38$). Furthermore, LARC knowledge levels significantly predicted intended conversational valence, such that individuals who scored higher in LARC knowledge were more likely to intend to engage in positive conversational valence ($\beta = -.053$, $p = .003$) than intend to engage in negative conversational valence ($\beta = -.053$, $p = .002$).

Moreover, awareness of others' positive LARC experiences significantly predicted intended conversational valence, such that individuals who knew of others' positive LARC experiences were more likely to intend to engage in positive conversational valence ($\beta = .536$, $p < .0001$) than intend to engage in negative conversational valence ($\beta = -.29$, $p = .048$). However, the regression was not statistically significant for predicting intended positive conversational valence ($\beta = .217$, $p = .087$) or intended negative conversational valence ($\beta = -.1$, $p = .48$) for participants that were unsure if they knew of others' positive experiences. Finally, awareness of others' negative LARC experiences significantly predicted intended conversational valence, such that individuals who knew of others'

negative LARC experiences were more likely to intend to engage in negative conversational valence ($\beta = .37, p < .0001$) than intend to engage in positive conversational valence ($\beta = -.275, p < .001$). However, the regression was not statistically significant for predicting intended positive conversational valence ($\beta = .003, p = .983$) or intended negative conversational valence ($\beta = .01, p = .966$) for participants who were unsure if they knew of others' negative experiences.

Table 3.3 Regression of IVs as Predictors of Intended Conversational Valence.

	Conversation Valence (Positive)		Conversation Valence (Negative)	
	β Estimate [95% CI]	p-value	β Estimate [95% CI]	p-value
LARC Awareness - No	.102 [-.18, .38]	.474	.28 [-.04, .59]	.08
LARC Awareness - Unsure	.314 [-.07, .70]	.107	-.19 [-.62, .23]	.38
Knowledge Test Score	-.053 [-.09, .02]	.003*	-.053 [-.09, -.02]	.002*
Other's positive experience - No	.536 [.28, .79]	<.0001***	-.29 [-.57, 0]	.048*
Other's positive experience - Unsure	.217 [-.03, .47]	.087	-.1 [-.38, .18]	.48
Other's negative experience - No	-.275 [-.44, .11]	.001**	.37 [.19, .56]	<.0001***
Other's negative experience - Unsure	.003 [-.29, .3]	.983	.01 [-.32, .34]	.966

*Answers were calculated by comparing no/unsure responses to yes responses and adjusting for age.

3.8.3 The Influences of Campaign Talk

H6 predicted that, exposure to positive LARC talk in an online mediated setting would elicit higher intention to seek more information about LARC than exposure to negative LARC talk. Only participants that were categorized as non-LARC users ($n = 706$) responded to this question. Multiple linear regression was used to test the influence of the experimental conditions (positive vs. negative) on intentions to seek information (see Table

10 for detailed results). Results showed that being exposed to a positive mediated conversation did not predict intentions to seek information from a healthcare provider ($\beta = -.17, p = .059$) or a close other ($\beta = -.11, p = .237$). However, results show a conservatively significant relation for that being exposed to a positive mediated conversation and seeking LARC information on the internet ($\beta = -.18, p = .045$).

Table 3.4 Regression of Treatment Conditions and Intentions to Seek Information.

Treatment	Healthcare Provider		Internet		Close other	
	β Estimate [95% CI]	p-value	β Estimate [95% CI]	p-value	β Estimate [95% CI]	p-value
Positive	-.17 [-.34, .01]	.059	-.18 [-.37, .005]	.045*	-.11 [-.28, .07]	.237

*Answers were calculated by comparing responses from the positive condition to responses from the negative condition and adjusting for exam score, age, previous awareness, awareness of others' LARC use, and awareness of others' positive and negative LARC experience.

The last hypothesis (H7) predicted that, for non-LARC users, exposure to positive LARC talk in an online mediated setting will elicit more positive a) attitudes toward LARC, b) descriptive norms, c) injunctive norms, and d) higher self-efficacy surrounding LARC uptake than those exposed to negative LARC talk, which in turn will elicit higher intentions to adopt a LARC. Only participants that were categorized as non-LARC users ($n = 706$) responded to this question. Multiple linear regressions were used to test the influence of the independent variables on intentions to adopt a LARC (see Table 11 for detailed results). Moreover, Figure 5 illustrates the conceptual model presented earlier alongside the results from the regressions.

Results show that being exposed to a positive instead of a negative mediated conversation about LARC significantly predicted positive attitudes toward LARC ($\beta = -.30, p = <.0001$), perceived descriptive norms ($\beta = -.20, p = .0002$), and intentions to adopt

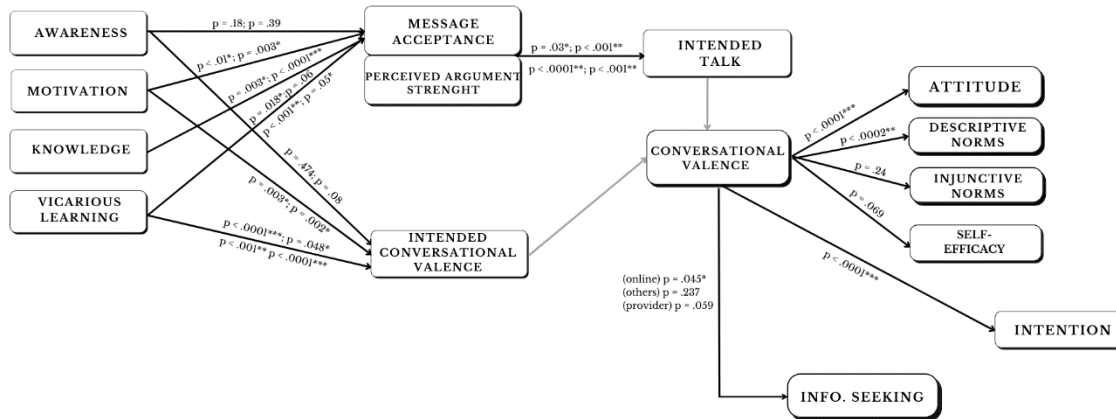
LARC in the future ($\beta = .40, p = <.0001$). However, exposure to positive instead of a negative mediated conversation about LARC did not significantly predict perceived positive injunctive norms ($\beta = -.07, p = .24$) or higher self-efficacy toward LARC uptake ($\beta = -.09, p = .069$).

Table 3.5 Regression of Proposed Model.

	Conversation Valence (Positive)	
	β Estimate [95% CI]	p-value
Attitudes	-.30 [-.40, -.21]	<.0001***
Descriptive norms	-.20 [-.30, -.09]	.0002**
Injunctive norms	-.07 [-.19, .05]	.24
Self-efficacy	-.09 [-.19, .01]	.069
Intentions	.40 [.22, .59]	<.0001***

*Answers were calculated by comparing responses from the positive condition to responses from the negative condition and adjusting for exam score, age, previous awareness, awareness of others' LARC use, and awareness of others' positive and negative LARC experiences.

Figure 3.5 Test of Proposed Model.



3.9 Preliminary Discussion and Implications for Study 2

This study tested the potential relationship between campaign message evaluation and willingness to talk about LARC to others. In addition to investigating the interplay between conversational occurrence and campaign influence, this study also investigated how conversation valence influences the persuasion process. In other words, this

experimental study tested the effects of conversational valence on intentions to seek information about LARC and on proximal variables of health behavior (i.e., LARC uptake). The use of experimental methods helped facilitate the understanding of how interpersonal discussion can amplify message effects through health behavior variables. According to O’Sullivan and Carr (2018):

By reconfiguring our conceptualization of mass communication and interpersonal communication in a way that transcends the channel characteristics, traditional labels, and assumed uses, while recognizing the reinvention of these channels for nontraditional uses, the masspersonal concept offers a foundation on which communicative theory may be developed to account for new (or at least more readily employed) forms of communication. As social media increasingly span multiple audiences and social contexts, enable multiple channels within single medium for interaction, and present new opportunities for self-presentation and feedback, the traditional assumptions underpinning interpersonal communication versus mass communication may no longer distinguish the complex, converged communicative processes occurring in social media’s rich, multichannel environment (p. 1175).

Results from this study demonstrated that motivation to prevent pregnancy and LARC knowledge levels significantly predicted negative message evaluations. Moreover, awareness of others’ positive or negative LARC experiences also significantly predicted message evaluation ratings, both in the acceptance and argument strength constructs of perceived message effectiveness. Additionally, this study found that participants who evaluated the campaign message positively were more likely to intend to talk to their family

members, friends, and providers about LARC than participants who evaluated the message negatively. Furthermore, intended positive LARC talk was predicted by high knowledge levels and awareness of others' positive LARC experiences. Conversely, intended negative LARC talk was predicted by awareness of others' negative LARC experiences. Intentions to engage in future information seeking about LARC after exposure to mediated LARC talk was not able to be supported. However, exposure to positive mediate LARC talk significantly predicted positive attitudes toward LARC, perceived descriptive norms, and intentions to adopt LARC.

3.9.1 Predicting Campaign Talk

Study 2 attempted to uncover deciding factors in engaging in campaign talk. One possible deciding factor in intentions to engage in campaign talk is message evaluation. It is important to note that the arguments used in a campaign's messages will be either stronger or weaker depending on the topic of the campaign, the available lines of persuasion, and the artfulness of the campaign's designers. By definition, strong arguments are those that generate more favorable than unfavorable thoughts; the opposite is true for weaker arguments (O'Keefe, 2003). Thus, one can expect that stronger arguments will activate fewer contrary cognitions and more supportive ones. As such, this study examined social variables that may influence the way participants evaluate campaign messages and test if evaluation of the campaign message predicts willingness to engage in campaign talk.

Results in this study showed that knowledge levels and awareness of others' positive and negative LARC experiences were significant in predicting campaign message evaluation ratings. While it was expected for participants with less knowledge to evaluate the campaign message less positively than those with higher knowledge, this study shed

light into the social and normative factors that may affect the cognitive processes behind message elaboration. For example, participants who knew of others' negative LARC experience evaluated the message poorly, but only in the message **acceptance** component, not the argument strength component. What this may mean is that even though an individual may objectively think the campaign message contains strong arguments, the information that they have gathered through their social context and experiences may have a stronger impact on their perceptions and attitudes toward the campaign topic.

Additionally, this study found that participants who positively evaluated the campaign message were more likely to intend to talk to their friends, family, and doctor about the topic of the campaign (i.e., LARC) compared to participants who negatively evaluated the message. Among previous studies of campaign-talk prediction, there is a discrepancy between who would be more likely to engage in campaign talk according to message evaluation. For example, Brennan et al. (2016) found evidence to suggest that, regardless of their evaluation of campaign messages, youth smokers who engaged in bias processing were more likely than nonsmokers to have discussed anti-smoking campaign messages. Conversely, Dunlop et al. (2010) found that youth who positively evaluated campaign messages were more likely to talk about the campaign than those who negatively evaluate the campaign messages. Moreover, Southwell and Torres (2006) indicate that media exposure may stimulate conversations because exposure to the campaign topic can improve individuals' understanding and ability to engage in conversations about said topic since better understanding of an issue can confer confidence, which might subsequently make individuals more likely to talk about that issue with others.

Although predicting conversational occurrence is important, we also must understand what drives individuals to talk positively or negatively about the campaign topic. Despite the fact that whether people discuss a health topic has been shown a relevant intervening variable for campaign effects, conversational valence as a mediator of health behavior has not yet been examined extensively. Thus, study aimed at examining the influences of informational social influence in predicting the valence of future campaign talk. Specifically, study 2 examined if social variables, such as awareness of others' positive or negative LARC experiences, impacted participants' intended conversational valence.

Results showed that participants who knew of others' positive LARC experiences and scored higher in LARC knowledge were more likely to intend to engage in positive conversational valence than intend to engage in negative conversational valence, even when accounting for their lack of interest in adopting a LARC themselves. Conversely, participants who knew of others' negative LARC experiences were more likely to intend to engage in negative conversational valence than intend to engage in positive conversational valence. Results of this study are consistent with previous work based on DOI, in that increased exposure to a campaign can prompt participants to initiate discussions about LARC with friends, which then serve as the potential initial step toward adopting a LARC. However, these discussions can also have a negative effect in LARC adoption depending on their content and valence. Negative campaign effects can occur as a result of social diffusion (Hornik & Yanovitzky, 2003). To illustrate, since a major barrier to the adoption of LARC is the prevalence of misinformation and misconceptions, it is possible that the dissemination of inaccurate information could perpetuate the mistrust and

underuse of LARC. Therefore, health promotion professionals and scholars should strive to guide the valence of campaign conversations surrounding LARC towards a positive one so LARC campaign messages may influence behavioral determinants of contraceptive behaviors.

3.9.2 The Mediating Role of Talk on Behavioral Intentions

Previous studies investigating how the interplay between health messages and interpersonal communication affects health variables have mainly focused on the mediating (Hwang, 2012; Jeong et al., 2015; Kam & Lee, 2013; Morgan, Golden, et al., 2018; Shah et al., 2007) or moderating role (DiIorio et al., 2007; Hardy & Scheufele, 2005; Van den Putte et al., 2007) of interpersonal communication in health campaign effects. Hornik and Yanovitzky (2003) stressed a mediation possibility at the individual level by noting the possibility that campaign exposure might lead a person to talk with others about campaign messages and to discover normative support, or lack thereof, for campaign-relevant behaviors. Notably, across the aforementioned studies there is a common interest in the effects of the conversations that occur either jointly with or after campaign exposure (Jeong & Bae, 2018). However, what is less clear is when and why do conversations affect health attitudes and behaviors. Southwell and Yzer (2007) noted that “we need to know more about various possible roles for talk, for example, as mediator or moderator, and more important caveats, such as the importance of group conversation and conversation content” (p. 504).

Thus, besides uncovering predictors of the occurrence and valence of campaign talk, this study explored the potential consequences of such conversations. According to Deutsch and Gerard (1955), in contrast to normative influence, informational social

influence involves accepting information obtained in the course of discussion as evidence about reality. Empirical studies have identified a set of moderating and mediating factors influencing the relationship between campaign talk and subsequent outcomes. For example, in one of the few experimental studies that tested the moderation of conversational occurrence, Dunlop et al. (2010) found that conversational occurrence moderated the effects of health messages on attitudes and self-efficacy.

One theory of informational social influence which relates directly to the role of conversation in attitude change is persuasive arguments theory (Ajzen & Cote, 2008; Gilbert et al., 1998). The basic premise of persuasive arguments theory is that, following discussion with others, people's judgments about an issue are based on the number and persuasiveness of pro and con arguments recalled from memory. According to this theory, interpersonal discussion about a message topic will cause an individual to shift their opinions in a given direction to the extent that the discussion exposes the individual to arguments in favor of that direction.

Moreover, several studies have found positive behavior change after discussions about health campaigns (De Vreese & Boomgaarden, 2006; Durkin & Wakefield, 2006; Fatusi et al., 2009; Kam & Lee, 2013; Karletsos et al., 2021; K. Kelly & Edwards, 1992). Additionally, some studies have examined the mediating role of campaign talk depending on the content of those conversations. For example, a recent study on smoking cessation found that antismoking mass mediated messages that elicited discussions about the campaign and topic increased participants' intention to quit smoking (Van Den Putte et al., 2011). Thus, this study examined the influence of campaign talk on two major health

campaign outcomes: participants' intentions to seek more information about the campaign topic and intentions to adopt a LARC.

First, a notable gap in the literature surrounds patient information preferences and information-seeking behaviors around contraceptive options. Although we know which sources women most commonly use, we are still not sure which sources women consider to be most impactful; especially regarding LARC methods. For instance, Jones et al. (2011) found that friends and family were the most *influential* sources while doctors were the most *trusted* source of information about non-daily contraception (i.e., LARC). Moreover, many studies promoting the use of online health information have been rather broad in their questioning and measuring of exposure to information about reproductive health on the Internet. Very few studies about online reproductive information seeking behaviors have reported the content and valence of the information provided (Hendriks et al., 2012; Hendriks et al., 2015). Thus, this study sought to understand if exposure to positive or negative social information on the internet would influence intentions to seek more information about LARC.

However, results in this study did not find a significant association between exposure to positive (or negative) campaign talk and intentions to seek more information. Participants showed no difference across the positive and negative conditions in terms of seeking more information from a healthcare provider, the internet, family member, or friend. Indeed, there was a conservative relation in participants who were exposed to a positive mediated conversation reporting intentions to seek LARC information on the internet, however, the association was not statistically significant.

In line with constructs from the reasoned action approach and the health belief model, this study investigated exposure to positive or negative mediated conversations about LARC influenced participants' intentions to adopt a LARC via attitudes, social norms, and self-efficacy. In their study exploring women's attitudes toward contraception, Potter et al. (2014) found that the overwhelming attitudes expressed about hormonal LARC methods were fear and anxiety. This concern towards hormonal contraception may serve as a possible explanation as to why lower efficacy methods, such as male condoms are more commonly utilized (Daniels & Jones, 2013; J. Jones et al., 2012). Results showed that, when controlling for knowledge levels, previous awareness, awareness of others' LARC use, and awareness of others' positive or negative LARC experience, being exposed to a positive instead of a negative mediated conversation about LARC was significantly associated with positive attitudes toward LARC among participants.

Frank et al. (2012) assessed the association between interpersonal communication and safer sex beliefs using data collected from the BBC's Condom Normalization Campaign in India, which was designed to promote conversations about and change public perceptions of condom use. They found that the valence of the discussions (i.e., positively talking about the messages) was associated with more positive perceived norms about condom use. Similarly, the findings in this study showed that, when controlling for knowledge levels, previous awareness, awareness of others' LARC use, and awareness of others' positive or negative LARC experience, being exposed to a positive instead of a negative mediated conversation about LARC was significantly associated with positive perceived descriptive norms toward LARC among participants. Therefore, we can argue

that messages that increase positive social talk could be beneficial for prevention outcomes because social talk is positively related LARC use norms.

According to Noar et al. (2011), increasing self-efficacy involves offering information to women that helps them to better decide on a contraceptive method that is right for them. Moreover, increasing self-efficacy also involves dispelling rumors about LARC methods that are so rampant in face-to-face and online networks (Russo et al., 2013; Wynn et al., 2009). In fact, a lot of information on LARC that is available in online forums contains myths and misconceptions that are largely focused on issues of safety, efficacy, and side effects of LARC paired with stories of failed contraception use. However, the findings in this study suggest that, when controlling for knowledge levels, previous awareness, awareness of others' LARC use, and awareness of others' positive or negative LARC experience, self-efficacy beliefs toward LARC uptake were no different between participants exposed to a positive or a negative mediated conversation about LARC.

3.9.3 Limitations of Study 2

Despite the efforts to examine the roles of campaign conversation in the generation and diffusion of campaign influence, this study does not provide a holistic view of the processes behind health campaign, conversations, and its influence on individuals' health perceptions and behaviors. First, this study did not explore the interaction between campaign exposure and actual conversation. Although this study can report on the association between campaign exposure, message evaluation, and intended campaign conversations, it cannot generalize on the actual influences of engaging in conversations with others. Second, this study only focuses on interpersonal interactions (i.e., social diffusion) as processes through which campaigns can influence behaviors. However, as

Hornik and Yanovitzky (2003) proposed, direct and institutional diffusion are also ways a campaign affects a person's health perception or behavior. Without a complete examination of other potentially powerful mediators, a comprehensive view of the processes of campaign effects may not be achieved.

Unfortunately, this study only compared two types of health messages, whereas a full assessment of a moderating impact of conversational occurrence requires comparing a health-message group to a no-health-message group. Thus, while the aforementioned findings indicate the importance of interpersonal communication as a moderating variable, limitations in this research makes it harder to pinpoint the precise causative impact of campaign talk on health behaviors. Moreover, this study only examined exposure to conversations instead of having participants actually engage in a conversation with others. Future studies should examine the influence between dyadic conversations, group conversations, and mediated conversations. Additionally, this study only used positive vs. negative conversational valence of one topic (i.e., LARC); it is important for future studies to design experimental studies with more variability of conversational valence across different health topics. Finally, because this study is based on a single set of data based on one topic and having a fairly homogenous sample of white 18-20-year-old females, the generalizability of the results to other campaigns may be questionable. Despite these limitations, this study contributes to communication and campaign research by advancing the current understanding of the social diffusion process of mass media health campaign effects and the role of campaign conversation in this process.

3.9.4 Future Directions

Results in this study did not find a significant association between exposure to positive (or negative) campaign talk and intentions to seek more information. A possible avenue for future studies is to utilize a different framework to analyze sexual health information seeking behavior. Notably, a recent study by Jayasundara (2021) used the theory of motivated information management (Afifi & Weiner, 2004) as a framework for their study about sexual health information seeking behaviors and satisfaction with the information outcome. Jayasundara (2021) found that the strength of curiosity and high-risk sexual behaviors have relative relationships to the efficacy of predicting information management decisions, proving TMIM as potential framework to study information seeking behaviors in this context.

The findings from this study suggest that conversational valence is relevant for health campaign effects. However, future research should examine the role of conversational valence within health campaign effects in a more realistic setting, in order to ensure that the same processes are at work in real life situations. Moreover, future research should focus on how to design effective health campaigns that are able to guide conversational valence in the desired direction. Additionally, future studies are needed to explore and identify important mediators that were not examined in this study. Finally, continued efforts to understand why conversations occur and how we can predict their valence and influence on perceptions and health behaviors are needed.

3.9.5 Conclusion

Talking about health, and specifically the valence of conversations, affects health intentions. Most crucially, exposure to a health message can impact this valence. Although

further research is needed to investigate real-life conversations and behaviors, this study recommends that health promotion researchers and practitioners may need to take conversational valence into account when studying the effects of health messages on persuasion outcomes and when designing health campaigns. This study underscored the significance of considering individual differences as possibly having critical roles in influencing not just how messages are interpreted, but also whether interpersonal communication occurs and the direction that social influence will take. Overall, this study added to the literature on exposure to health communication campaigns informed by behavior change theories and diffusion theory by demonstrating that influencing adoption of LARC can be effectively achieved by targeting campaign messages to promote conversations that will influence constructs such as attitude, norms, and self-efficacy.

CHAPTER 4. GENERAL DISCUSSION

Past studies have shown that when audiences discuss health messages with others, they are generally more persuaded by the message than if they did not discuss it (Jeong & Bae, 2018). When the discussion is about the target health topic and is positive in nature, there is more likely to be a positive, additive effect of conversation on persuasion (Jeong & Bae, 2018). Moreover, health campaigns that use interpersonal communication channels as a central component of a larger, multichannel communication strategy have reported stronger and longer-lasting effects on health behavior changes than health campaigns that do not use interpersonal communication channels to effect change. Still, the process of how discussion of a health message impacts attitudes has been understudied. Given the potential for campaign-related conversations to contribute to campaign effectiveness, it is surprising that so little research has been conducted to investigate the factors that influence whether or not a given campaign is discussed, and whether or not a given individual will engage in a discussion (Southwell & Yzer, 2009).

This dissertation examined intentions to diffuse and adopt perceptions and behaviors surrounding LARC uptake by incorporating both mass and interpersonal channels via new media sites such as Reddit. More specifically, examining how interpersonal communication, both face to face or in online communities, can strengthen or mitigate campaign effects. A focus on LARC and unintended pregnancy was chosen because unintended pregnancy and contraceptive misuse are pervasive problems in the US, especially for adolescents and young adults, and are related to many negative outcomes beyond pregnancy (Parks & Peipert, 2016; Trussell et al., 2013).

Promoting behavior change, in this case LARC uptake, via communication strategies can become an enormous challenge, especially considering that Spies et al. (2010) found that most young women do not consider LARC a realistic option for them. Even worse, Burns et al. (2015) found that many young women are not even aware of LARC methods; with only 21% of their participants of sexually active women ages 16-24 having heard of LARC. Similarly, in their study about women's reproductive health literacy, Barrett et al. (2012) found that their participants believed that birth control was synonymous with "the pill," and nondaily options (i.e., LARC) were perceived as new and untested.

Research into LARC's impacts until now has largely been from a public health perspective that has emphasized their potential for reducing women's risk of unintended pregnancy (Ahrens et al., 2018; Aslam et al., 2017; Birgisson et al., 2015; Campo et al., 2010; Finer & Zolna, 2011; Frost et al., 2012; Garbers et al., 2013; Hayford & Guzzo, 2016; Lessard et al., 2012; Taylor et al., 2010; Zuckerman et al., 2014). However, Gomez et al. (2014) argue that the promotion of LARC should focus on enabling women to achieve a broader set of reproductive goals than that of reducing the risk of unintended pregnancy, for example, increasing women's ability to have births of their desired number and timing over the reproductive life course.

Therefore, Price and Hawkins (2007) propose a shift of focus from contraception as pregnancy prevention to contraception as a means toward achieving a woman's family planning goals. Research on how women use LARC to achieve their family planning goals and thereby shape their reproductive life course will also be helpful in informing providers' and policymakers' efforts such that they align well with women's contraceptive and

reproductive decision-making. Furthermore, focusing on women's reproductive health through the lens of statistical risks neglects women's relational and social context, which is undoubtedly critical to every woman's decision making about family planning.

Additionally, it is important to note that many factors other than the use of effective contraception play a role in unintended pregnancy (Hall et al., 2012; Kilfoyle et al., 2016; Koren, 2019, 2019; Prather et al., 2018; Price & Hawkins, 2007; Tapales et al., 2018; Vamos et al., 2020; Zuberi et al., 2015). Therefore, LARC alone cannot solve the problem and must be one part of a larger effort to reduce these disparities. Moreover, whereas increased access to, and use of, LARC is one possible solution to the reproductive health and socioeconomic inequalities in our society, it is not the only solution. Taylor et al. (2007) suggest that one way to mobilize efforts for reducing unintended pregnancy is normalizing contraceptive services within a prevention framework (i.e., using organized, systematic primary, secondary, and tertiary prevention strategies) that is integrated into the broader health care system. The American College of Obstetricians and Gynecologists (ACOG), the Association of Women's Health, the American Academy of Pediatrics, and others have recognized that primary prevention strategies for unintended pregnancy should include preconception care, contraception counseling, culturally appropriate sexual and reproductive health education and dispensing and prescribing contraceptives (Birgisson et al., 2015; Campo et al., 2010; Zuckerman et al., 2014).

By using a LARC promotion message and by focusing on young adults, this dissertation was able to gain more insight into how young women can be stimulated to adopt more effective and longer acting reversible contraception. This was achieved by considering interpersonal communication for contraception-related behaviors as a process

that is particularly important during contraceptive decision-making, given that young women frequently discuss contraception and sex behaviors in social contexts, either with their close others or through online communities. Moreover, thanks to new media channels, individuals nowadays are also able to gather health information through others' health experiences outside their social network. Notably, past studies have found that new media is an important source of information that facilitates observational learning and increases self-efficacy to perform given behaviors (Kim et al., 2016; Ziebland & Wyke, 2012). Therefore, this dissertation focused on campaign talk and vicarious learning through new media channels.

4.1 Reproductive Health Literacy and Contraceptive Behaviors

Low health literacy is associated with poor health outcomes and inadequate utilization of health care services as well as being a barrier to health knowledge, compliance, and access to care even among individuals with regular access to the health care system. For instance, studies have demonstrated that low health literacy and numeracy are associated with lack of knowledge about contraception, menstrual cycle, and ovulation tracking (Kilfoyle et al., 2016; Vamos et al 2020). Moreover, Yee and Simon (2013) found that women who demonstrated low health numeracy described having more difficulties using contraception, particularly methods requiring regular user actions.

In study 1, results revealed that there was a statistically significant difference in LARC knowledge levels between LARC users and non-LARC users, so that LARC users were more knowledgeable about the mechanisms, side effects, and procedures of LARC and LARC uptake. Misinformation and misconceptions about reproductive health and contraception may stem from a lack of resources for information and service providers.

This lack of reproductive knowledge is also supplemented by a cultural unease among parents about discussing sexual topics (Jerman & Constantine, 2010), limited time in health care appointments to comprehensively discuss contraceptive behaviors (Zapata et al., 2015), and a lack of coordinated evidence-based clinical guidelines for unintended pregnancy prevention (Schalet, 2011; Svanemyr et al., 2015; Taylor et al., 2010), that result in a systemic failure to successfully provide accurate information and prevention services to young women at risk of unintended pregnancy.

Furthermore, Stevens (2018) explains that these misconceptions are so rampant among women's social networks by means such as the diffusion of negative information, lack of diffusion of positive information, and generation and maintenance of social norms related to the use of the LARC. Similarly, Ali et al. (2011b) found that while social networks can be valuable for learning about different contraceptive methods, negative information and experiences are more likely to be discussed than positive or objective attributes. Furthermore, a study by Barrett et al. (2012) noted that negative misinformation about LARC methods was perceived as more prevalent and memorable than positive information in discussions between female friends and family members.

Luckily, extant literature indicates that while most women are unfamiliar with LARC methods, exposure to educational interventions increases awareness and positive perceptions of these options (Byker et al., 2019; Sundstrom et al., 2016; S. Timmons et al., 2016; Timmons et al., 2018). Contraceptive knowledge plays a role in women's contraceptive use (Craig et al., 2014; Greenberg et al., 2017; Hauck & Costescu, 2015; Ryan et al., 2007; Spies et al., 2010; Suellentrop & Frost, 2009; White et al., 2018). As a result, misunderstandings about LARC's safety and efficacy contribute to its

underutilization. Previous research suggests that education about effective contraceptive methods, including addressing misperceptions about the side effects and risks of these methods may increase LARC use (Byker et al., 2019; Raifman et al., 2018; Stevens & Berlan, 2014).

4.2 Normative Influence on Contraceptive Behaviors

Most studies on normative influences on contraceptive behaviors have primarily explored the relationship of peer perceptions to women's sexuality; for example, if young women believe their peers are not using LARC, they are less likely to use it themselves. The few studies that have looked at the content of contraceptive conversations between friends found that while negative social communication tends to concern rare events, positive social communication typically focuses on method characteristics (Ali et al., 2011; Benson et al., 2012). A noticeable gap this dissertation attempted to fill was that although several studies have documented that women value embodied experience as an important source of information about contraception, the role of contraceptive information based on vicarious experiences is still inconclusive. Moreover, this dissertation investigated how informal and formal sources can support women in reproductive health decision-making with a special focus on their social networks (both in person or in online communities) as sources of information, knowledge, and norms regarding LARC uptake.

In terms of subjective norms, participants reported that most people who were important to them would approve of them using a LARC. They also agreed that most who were important to them would have positive things to say about LARC. However, in terms of descriptive norms, participants perceived that most women like them would not use LARC. Additionally, findings from previous studies suggest that the perception of network

members' attitude toward family planning was found to be positively associated with contraceptive use. Furthermore, other studies have provided evidence that social networks and social communication influence women's attitudes about contraception and their use of modern methods (Frost et al., 2012; Sedlander & Rimal 2019). Results of this study highlight the complexities of contraceptive decision-making and shed light on the significance of an individual's social network in analyzing and carrying out family planning decisions. Although decisions concerning contraception are influenced by a variety of factors not addressed here, this dissertation's findings support the notion of social networks' role in family planning decisions.

4.3 The Role of Conversations in Health Campaigns

O'Sullivan and Carr (2018) identified that scholarly work merges mass communication and interpersonal communication in one of four ways. Studies either a) explicitly addressed mass-interpersonal synthesis as a theoretical or disciplinary structural issue, b) examined interpersonal communication and mass media in the same context, c) examined phenomena or processes incorporating both mass and interpersonal channels, or d) applied traditionally interpersonal theories to mass communication processes or traditionally mass communication theories to interpersonal processes. This dissertation explored determinants that may influence women's willingness to engage in LARC talk with others after campaign exposure and tested the social diffusion model of campaign influence with the added construct of conversational valence in the context of LARC uptake. As it relates to contraceptive decision making and LARC uptake, knowledge levels and awareness of others' positive and negative LARC experience predicted the message

evaluation ratings of campaign messages. Moreover, individuals who positively evaluated the message were more likely to engage in campaign talk with others.

In terms of health campaigns, the influence of interpersonal communication in campaign effects can be explained through Rogers' (2004) five-stage innovation-decision process. For instance, during the persuasion stage, individuals will form a favorable or unfavorable attitude towards the innovation (i.e., LARC). Haider and Kreps (2004) argue that health scholars should focus on the interpersonal channels of communication during this stage as early adopters could convince late adopters and laggards to adopt the innovation (i.e., vicarious learning and social networks). After, in the decision stage, individuals will seek help from others to form an evaluation about the advantages and disadvantages with respect to their own situations. Interactions during these stages highlight how interpersonal conversations with others can be critical in the adoption and maintenance of health behaviors (i.e., information seeking behaviors through social networks or new media channels).

Moreover, scholarship on DOI also indicates that there is a strong association between the specific methods of contraception used by a respondent and those used by her social network. For example, Valente et al. (1997) found that among Cameroonian women, the behavior, and characteristics of the members in a respondent's personal network were associated with their contraceptive use. Other studies examining the relationship between social communication and mass media found that contraceptive use was commonly associated with the belief that social network members were using contraception (Madden et al., 2016; Yee & Simon, 2010). Specifically regarding LARC, Anderson et al. (2014) found women were more inclined to view IUDs positively if their social support systems

also expressed similar opinions. Overall, results of this dissertation concur with previous studies in that previous social learning experiences can affect and continue the perpetuation of negative talk surrounding a health topic. The findings in this study indicate that, aside from the mediating role of whether or not individuals communicate, the valence with which people discuss health concerns also serves as an intervening variable between health campaign exposure and relevant persuasion outcomes. Thus, health messages have the power to trigger conversations and influence conversational valence and, as a result, behavioral intentions.

Other people's health experiences can provide information that can help allay fears, boost confidence, and suggest or confirm doctors' opinions by comparing others' experiences with one's own experiences and knowledge. Additionally, knowing that others have undergone similar health situations can bring hope and reassurance, as well as greater feelings of control and confidence that one can successfully choose a contraceptive method. Similarly, others' accounts of different treatments and outcomes can make information more relevant, provide contextual information about causes and consequences, and help people understand what may happen. Finally, in line with the finding from Ziebland and Wyke (2012), simple and practical tips on how others have managed health problems, their coping strategies, and their advice based on what has worked for them are highly valued for their pragmatism, accessibility, and non-jargon language.

4.4 New Media Interactions and Health Behaviors

Beyond their interpersonal social network, individuals can obtain vital contraceptive information via media sources such as the internet, social media, and television. In their study on online sources and sexual health, Hu and Shyam Sundar (2010)

found that their participants used new media similarly to mass media, and at other times new media offered an extension of interpersonal communication, allowing participants to personalize their use of communication channels, resulting in more tailored information seeking.

Individuals can use new media to create novel interpersonal communication networks. Online communities, in particular, build around a single trait, in this case it could be reproductive health topics, while contrasting in other aspects (e.g., socioeconomic status, education, income, location, etc.). The findings from this study suggest that new media may provide unique access to heterophilous groups in which individuals can access health information and receive responses from a multitude of perspectives.

Moreover, the ease of access to many communication channels, ranging from organizational websites to community discussion boards, causes users to reconsider their notion of an expert; especially to those looking for storytelling and vicarious experiences as sources of LARC information. In the case of Reddit, layperson expertise from LARC users can be viewed as trustworthy. According to the findings of study 2, new media may serve the function of both personal and impersonal influence. Social media, in particular, can foster direct interactions with others through online communities, forums, and blogs. The findings highlight to the importance of new media in assisting women, in particular, to reclaim personal control over reality by enhancing their ability to oppose normative assumptions and understandings of LARC in their personal networks. As a result, social media may outperform face-to-face communication in terms of normative social influence. Thus, this dissertation provides support to Katz and Lazarsfeld (2017) call to consider new media as an intervening variable in the mass communication process.

4.5 Practical Implications

LARC promotion must expand, and not restrict, contraceptive options for all women, particularly for women whose racial, ethnic or class identities have made them targets of policies aiming to restrict their fertility. Therefore, efforts to improve access to LARC must be integrated into a larger framework of reproductive justice for women of color and in poverty. The goal should be that every woman has the opportunity to use a LARC method, meaning that she has a provider who can and will give her the method, without barriers; insurance that covers insertion and removal; and the knowledge to make an informed decision (Dehlendorf et al., 2013; Fuzzell et al., 2017; Levy et al., 2015; Schivone & Glish, 2017; Yee & Simon, 2011; L. Yee & Simon, 2011; Zapata et al., 2015). As Gomez et al. (2014) noted, we can increase women's ability to prevent and plan pregnancies by ensuring that as we devise solutions that eliminate barriers to LARC use for all women, we do not inadvertently diminish the reproductive autonomy of some women.

In terms of contraceptive behaviors at the individual level, there is a need to focus on empowering women to take control of contraceptive decision-making. At the relationship/social network level, there is a need to understand how relationships can create and reinforce positive social norms around contraceptive health behaviors. This is specifically important in close relationships that influence the sexual and reproductive decisions of women, such as parents, partners, and peers. At the community level, there is a need to examine how a community can support women by increasing access to information, resources, and health services.

It has been widely cited that among female physicians, LARC methods are adopted at a higher rate than the general population. This is of importance since recent research also suggests that women may be receptive to clinician self-disclosure of their personal contraceptive method when discussing potential contraception (Levy et al., 2015). Furthermore, as this study has highlighted; women value the embodied experiences of others. Therefore, humanizing providers by stepping outside of the authoritative information sources may shift the attitudes and intentions young women currently have regarding LARC uptake.

Several lessons learned from previous campaigns revolve around channels of communication (Byker et al., 2019; Shakibnia et al., 2018; Sundstrom et al., 2021; Timmons et al., 2016; Timmons et al., 2018). Participants of these campaigns have indicated that social media is the best method for educating women about LARC. Beyond campaign reach and exposure, the You Have Options campaign (Sundstrom et al., 2021) discovered through their social media analytics that their campaign messages increased audience engagement; illustrating that social media serves as an important channel for health information among college-aged women. Findings from this dissertation expand on previous research noting that the incorporation of social media into health campaigns may increase the influence of the campaign and potential for behavior change.

Previous studies have called for further research about the more nuanced aspects of the 'online experience'. For instance, Gold et al. (2011) found that for many young people, going online is an experience beyond mere information-seeking. Instead, it can be an extension of young people's identities, as they negotiate online constructions of important social cues such as gendered stereotypes, power dynamics within relationships, and

relations to peers. In response to this call, this dissertation explored how information found online (i.e., Reddit), specifically others' personal experiences with LARC, influenced women's attitudes, norms, and intentions regarding LARC uptake. For example, online support groups (e.g., forums and social media groups) allow users to connect with others with shared experiences to receive information, advice, and encouragement in health topics. Online interactions with others can also provide users with influential health information about health promotion and prevention behaviors.

At the conceptual level, this technological innovation forces us to rethink the fundamental elements of the human communication process. For example, Walther (2017) examined whether interpersonal communication in public chat rooms is the same as face-to-face communication and found that there is little difference between face-to face and interactive CMC, such as chat. In fact, David et al. (2006) found that users perceive online bulletin boards as valuable venues of personal opinions, actionable suggestions, and concrete information. According to Flanagin (2017), online communities have achieved this popularity by providing a shared, user-driven environment that facilitates and encourages users to collaborate in developing content, sharing information, and sharing and commenting on personal experiences.

As a result of examining social determinants of contraceptive decision-making, we can improve our understanding of the role of social network-propagated knowledge in contraceptive decision-making. Furthermore, this knowledge may contribute to the overarching goal of reducing the risk of contraception misuse/nonuse and consequently, unintended pregnancy. Considering how societal and individual factors can affect contraceptive use, Price and Hawkins (2007) provided examples on how interventions and

policy initiatives can lead to positive change in reproductive health by following a social analysis approach. In brief, reproductive health interventions should: 1) address reproductive rights by including equity-based objectives, 2) increase access of vulnerable groups to resources and services, 3) enhance existing sources of social capital by organizing informal and formal community-based support networks, and 4) use peer support networks to diffuse information and reinforce behaviors.

This dissertation presents key takeaways to help practitioners understand how to counsel young women seeking contraception. For example, practitioners can use these findings to understand the importance of contraceptive counseling and education, specifically toward LARC, as many of their patients may have incorrect, outdated, or no information about these methods. Moreover, practitioners should acknowledge and explore the role of the patient's social network. The findings of this dissertation also highlight the need of incorporating social network-based counseling into community education activities. For example, it may be good to explore group activities with individuals in order to create community dialogue regarding contraception attitudes. This not only teaches providers about typical ideas in the community, but it also allows factual information to be transmitted to the group, who will likely pass this knowledge on to other women. As seen in previous studies, peer-led sexual health promotion interventions can result in gains in knowledge, attitude, and intentions (Wilson et al., 2016). We also know that individuals who are exposed to information about desirable reproductive health behaviors through their social network are more likely to engage in such activities themselves. Therefore, imparting factual information in a social environment may have a beneficial impact on the

uptake of effective contraceptive techniques while also revealing valuable information about the contraceptive rumors that circulate in a community.

4.6 Theoretical Implications

Although health campaigns hold great promise, previous meta-analyses looking at the effectiveness of media campaigns on health behavior have found that this promise has been inconsistently realized (Carpenter, 2010; Jeong & Bae, 2018; Snyder et al., 2004). In fact, Snyder (2007) found that, on average, campaigns have a small and quantifiable effect on behavior change. Hendriks et al. (2014) posits that these modest and inconsistent effects of health campaigns may point to the existence of moderating factors (i.e., variables that influence the effect of health campaign exposure on health variables).

A potentially important moderating variable is interpersonal communication (referred to as conversational occurrence when discussing as a variable of campaign effects), given that people may discuss the content of the health message after being exposed to a health campaign. In this context, a moderating relationship implies that health conversations influence the effects of health campaigns on health variables. However, although relatively many studies have investigated the moderating role of conversational occurrence within the relationship between health message exposure and health variables, only a few studies have examined a mediating role.

Southwell and Yzer (2007), for example, have suggested that conversations may alter, undermine, or reinforce the effects of health campaign messages. Previous studies have also placed conversational occurrence in the role of a mediator of health campaign effects, examining the possibility that campaigns affect interpersonal communication, which then influence health outcomes (Hafstad & Aarø, 1997; Hwang, 2012; Schuster et

al., 2006; & van den Putte et al., 2011). Results from previous studies and from this dissertation show that conversational occurrence can 1) amplify the campaign messages' effects on attitudes and beliefs by strengthening individuals' memory of the campaign messages; 2) attenuate the effects of the media campaign when the discussions downplay the severity or susceptibility of the problem; and 3) amplify inaccurate interpretations of the campaign messages, thereby resulting in unintended negative consequences.

Therefore, we can consider conversations also to serve as a mediating link between campaign exposure and particular campaign goals. Indeed, thinking of campaign talk as a mediator implies that campaign effects can be indirect. Moreover, Southwell and Yzer (2007) argue "that failure to model conversation in campaign evaluation analyses restricts one's ability to demonstrate those indirect effects adequately", also adding that "accepting a possible mediating role for conversation might better reveal actual campaign effects" (p. 442). In this case, a mediational pathway entails that health campaigns influence the occurrence of social talk, which subsequently influence health variables.

As for the theoretical implication of reproductive health campaigns, DOI may clarify the uptake of LARC methods among college women where interpersonal communication between friends, family, and doctors becomes increasingly important in complex decision-making processes. Finally, DOI also implies that if there is sufficient knowledge and a positive enough attitude then the individual will decide to adopt the innovation (Rogers, 2004). Therefore, accounting for the findings of study 1 and study 2, a measure of intention derived from diffusion theory would include a combination of knowledge, beliefs about the positive and negative attributes (values) of the innovation,

and discussion of the innovation with one's social network (both face to face or in online communities), and their social approval.

CHAPTER 5. GENERAL CONCLUSION

This study contributes to theoretical and practical understanding of women's perceptions and use of new media, mass media, and interpersonal communication channels in relation contraceptive decision-making. Together, the findings from study 1 and 2 suggest that a lack of accurate knowledge about LARC, including their mechanism of action, their potential side effects, and their suitability for young women, continues to preclude women from choosing these methods. These misconceptions are rampant among women's social networks by means such as the diffusion of negative information, lack of diffusion of positive information, and generation and maintenance of social norms related to the use of the LARC.

Although important, contraceptive characteristics are not the only factor women think about when choosing a method. Findings demonstrate that contraceptive decision making is the interplay between competing internal and external influences. Moreover, factors associated with inconsistent or non-use of contraception are multidimensional and intersecting, involving individual attributes, partner dynamics, social networks, and features of the health system. Social networks can be valuable for learning about different contraceptive methods; however, negative information and experiences are more likely to be discussed than positive or objective attributes. Furthermore, negative misinformation about LARC methods can be perceived as more prevalent and memorable than positive information in discussions between female friends and family members.

Providing women with balanced information about all of their contraceptive choices, including the positive and negative qualities of each, can have a significant impact on LARC uptake. Therefore, diffusing accurate information about LARC may increase

LARC knowledge levels and in turn can have a positive impact on the rates of unintended pregnancy among young women. Especially since young adulthood is an opportune period for women to learn more about their sexual and reproductive health as they acquire more responsibilities for their own health and cultivate new health behavior and habits.

- Depo-Provera
 - Hormonal IUD (e.g., Mirena, Kyleena, Liletta, or Skyla)
 - Non-Hormonal IUD (e.g., Paraguard, Copper IUD)
 - Implant (e.g., Nexplanon)
 - Diaphragm
 - Birth control sponge
 - Spermicide and gel
 - Cervical cap
 - Emergency contraception (PlanB)
10. Select all the birth control methods you have used in the past:
- Male condom
 - Female condom
 - Birth control pill
 - Birth control patch
 - NuvaRing or other birth control ring
 - Birth control shot (Depo-Provera)
 - Hormonal IUD (e.g., Mirena, Kyleena, Liletta, or Skyla)
 - Non-Hormonal IUD (e.g., Paraguard, Copper IUD)
 - Implant (e.g., Nexplanon)
 - Diaphragm
 - Birth control sponge
 - Spermicide and gel
 - Cervical cap
 - Emergency contraception (PlanB)
11. How important is it for you to not become pregnant in the next 3 months?
- 1 2 3 4 5
12. Do you know any close others (for example, friend, family, coworker, classmate, etc.) that have or have had an IUD or implant?
- 1 2 3
13. Do you know of a close person to you who had a bad experience with an IUD or implant?
- 1 2 3
14. Do you know of a close person to you who had a good experience with an IUD or implant?
- 1 2 3
15. Have you heard about long acting reversible contraceptive methods such as the IUD or implant before?
- 1 2 3
16. Where have you heard about these long acting birth control methods such as IUDs or implants? (select all that apply)
- Medical provider
 - Friends
 - Mother
 - Siblings
 - Other family members
 - TV advertisement

- Social media
17. Read the following statements and select whether they are true or false
- IUDs and Nexplanon implants are birth control methods that you need to remember to insert before each sex act.
 - IUDs and Nexplanon implants are two of the most effective forms of reversible birth control available for women.
 - Having an IUD or Nexplanon implant placed requires a health care provider.
 - IUDs can only be inserted during your period.
 - IUDs and Nexplanon implants have to be removed by a health care provider.
 - IUDs may not fit in women with small uteruses.
 - You can have an IUD or Nexplanon implant if you've never had a baby.
 - All IUDs have hormones.
 - IUDs can cause abortions.
 - IUDs and Nexplanon implants hurt your ability to get pregnant in the future.
 - IUDs and implants cause ectopic pregnancies.
 - IUDs and implants cause pelvic inflammatory disease.
 - IUDs and Nexplanon implants protect against STDs including HIV.
 - A Nexplanon implant can be in place for 3 years before you have to replace it.
 - An IUD can be in place for 3 to 10 years.
18. How interested are you in using a long acting reversible contraceptive method such as an IUD (hormonal or non-hormonal) or implant?
- 1 2 3 4
19. Please select the characteristics of LARCs that would make you interested in using a LARC?
- It is very effective in preventing pregnancy.
 - I would not have to use a barrier method.
 - No one else would have to know about the LARC.
 - Some LARCs do not have hormones.
 - It would not get in the way of sex.
 - It lasts for a long time (3–10 years).
 - I would not have to think about or do anything before sex.
 - It is easy to use.
 - None of these characteristics are attractive.
20. Please select the characteristics of LARCs that would make you disinterested in using a LARC?
- A doctor or nurse has to put it in and remove it.
 - I don't like the idea of having something in my body.
 - It does not protect you from STIs.
 - It might hurt to get it inserted or taken out.
 - They are too expensive.
 - I don't want to use birth control with hormones (for implant and hormonal IUDs).
 - I don't need a method of birth control.
21. Next, a list of common side effect of LARCs will be shown. Please answer how each side effect would affect your decision to use LARCs.

- No periods.

1	2	3	4
---	---	---	---
- Light bleeding between periods for 3 to 6 months.

1	2	3	4
---	---	---	---
- Heavier periods and cramping.

1	2	3	4
---	---	---	---
- Potential weight change.

1	2	3	4
---	---	---	---

APPENDIX B. SURVEY STUDY 2

Post Campaign Video Exposure

Please indicate on a 5-point scale the extent to which you think that:

1. The video presented arguments or stories that were believable
1 2 3 4 5
 2. The video presented materials and resources that were convincing
1 2 3 4 5
 3. The video helped me feel more knowledgeable about LARCs.
1 2 3 4 5
 4. The video would help my friends, family, or close others better understand LARCs.
1 2 3 4 5
 5. The video put thoughts in my mind about using a LARC as a birth control method.
1 2 3 4 5
 6. Overall, how much do you agree or disagree with the information in the video.
1 2 3 4 5
 7. Is the information given in the video about LARCs a strong or weak argument to choose LARCs as a birth control method?
1 2 3 4 5
- Please indicate on a 5-point scale how likely each scenario would be.
8. I would tell a friend, family member, or close other to get a LARC if I thought they were thinking about changing birth control methods.
1 2 3 4 5
 9. If I knew someone was unhappy with their birth control method I would tell them about LARCs.
1 2 3 4 5
 10. I will bring up LARCs next time I see my medical provider.
1 2 3 4 5
 11. If I am in a group of people and they are discussing sexual health topics, I am likely to bring up LARCs.
1 2 3 4 5
 12. If I were to discuss LARCs with someone, I would mostly say positive things about LARCs.
1 2 3 4 5
 13. If I were to discuss LARCs with someone, I would mostly say negative things about LARCs.
1 2 3 4 5

Post Chat Room Exposure

Please indicate on a 4-point scale the extent to which you think that:

1. Choosing a LARC as birth control method is good.
1 2 3 4
2. Choosing a LARC as birth control method is bad.
1 2 3 4
3. Choosing a LARC as birth control method is smart.
1 2 3 4

4. Choosing a LARC as birth control method is unwise.
1 2 3 4
5. Choosing a LARC as birth control method is well-planned.
1 2 3 4
6. Choosing a LARC as birth control method is reckless or unsafe.
1 2 3 4
7. Most people who are important to me would approve of my using a LARC as a birth control method.
1 2 3 4
8. Most people who are important to me would have positive things to say about LARCs
1 2 3 4
9. Most people who are important to me would have negative things to say about LARCs
1 2 3 4
10. Most women my age use LARCs as birth control methods.
1 2 3 4
11. Most women my age are interested in using LARCs as birth control methods.
1 2 3 4
12. I am confident that if I wanted to use a LARC I would figure out how to do so.
1 2 3 4

Please indicate on a 5-point scale the extent to which you think that:

13. If someone close to me (e.g., parents, siblings, significant other, or friends) encourages you to switch birth control method to LARCs how likely would you comply?
1 2 3 4 5
14. How likely is it that it will be hard for you to figure out how to acquire a LARC from your health care provider?
1 2 3 4 5
15. How likely is it to be too difficult to get a LARC (for example, having to find a provider who will insert it, schedule an appointment, etc.)?
1 2 3 4 5
16. How likely are you to seek more information about LARCs from a healthcare provider?
1 2 3 4 5
17. How likely are you to seek more information about LARCs from the internet?
1 2 3 4 5
18. How likely are you to seek more information about LARCs by asking people from your social network?
1 2 3 4 5
19. How likely are you to use a LARC in the next six months?
1 2 3 4 5
20. How likely are you to never choose a LARC as a birth control method?
1 2 3 4 5

APPENDIX B. CHAT ROOM STIMULI

Positive Conversational Valence Condition

Posted by u/Thepizzagirl9089 3 months ago 🗨️ 📌 🔄 📄

918 **What are your stories/opinions on IUDs?**

FAQ Update

97% Upvoted

852 Comments → Share 📌 Hide 📄 Report

Icy-Organization-338 · 3m 🗨️ 📌

I've had 2 Mirena over the last 7 years and can't rave enough about them. I've had no side effects besides from 6 weeks of constant bleeding / spotting when I got the first one put in, otherwise it's been a dream run with no periods for 7 years.

👍 1.0k 📄 Share Report Save

LeepingLemurs · 3m

I've had mine for a little over a year now and it has been my favorite form of birth control so far. The pill made me horribly nauseous and I gained so much weight when using Implanon. As a bonus, I have only had incredibly light periods when I do have them, which is rare.

However, the first 6 weeks after insertion were rough. I typically have debilitating cramps under the best of circumstances, but nothing compared to cramping within the first month and a half of being placed on Mirena. I will occasionally have severe cramp still, but I can count on one hand the times that this has happened. Overall, I love it.

👍 7 📄 Share Report Save

ifyouseekaye_me · 3m

Unsolicited opinion, I love the arm implant. I just had my 4th one put in (replaced every 3ish years). I had tried Mirena prior and had it removed after a year due to cramping. Nexplanon varies for everyone but I typically have no period for the first 2 years and then it starts to return to a normal cycle over the last year.

Insertion/removal is uncomfortable but they numb your arm and you wear a pressure bandage for 24 hours afterwards. Usually some bruising. I have a small round scar where it's been inserted/removed but I've opted to keep it in the same place every time. If you decide to try it, I hope it goes as well for you as it has for me!!

👍 9 📄 Share Report Save

Koleilei · 3m

I had mine inserted after a blood clot as it was the only safe birth control left to me (needed for PCOS reasons) and I wouldn't stop massively bleeding to the point of dizziness. The insertion went fine and was over in two minutes and the only side effects I've had is being slightly overall more happy and a higher sex drive.

My opinion is that women should examine options with their doctors, have open and honest communication, and choose what works for them.

👍 412 📄 Share Report Save

KULibrarian · 3m

They're not for everyone, and certainly have their drawbacks, but for me they've been a godsend. I started taking the pill in HS, but at some point in college, I wasn't able to access the brand I'd been using any longer - and every other pill I tried was hell for me.

I switched to a hormonal IUD when I was 21, and now I'm 32 and on my 3rd. Insertion/removal fucking sucks, but it's worth it. I haven't had a "real" period in years, though I do still get some of the cramps and mood swings, just no bleeding.

I'm childfree and would have had a tubal ligation at 18 if I'd been allowed - by the time my current IUD is up, I'll be in my late 30s, which will hopefully be deemed old enough to finally have full reproductive autonomy. 😊

👍 87 📄 Share Report Save

notrandomspaghetti · 3m

I'd say the horror stories are few and far between. It just seems like there's so many because of the internet. I'm on my second iud and I love it. Yes, it hurt getting in and I did spot for the first few months as expected, but I never have to use condoms and my body can't handle birth control pills--the higher level of hormones is too much for me.

👍 13 📄 Share Report Save

Negative Conversational Valence Condition

Posted by u/Thepizzagirl9089 3 months ago

918 What are your stories/opinions on IUDs?

FAQ Update

97% Upvoted

852 Comments Share Save Hide Report

Caveatsubscrptor · 3m

I unknowingly got a pelvic infection after insertion - it's been 3 years of constant pain and infection, 3 hospital admissions and a surgery.

My new gynae recommends rather doing it under general anaesthetic as it's more sterile.

I will never have another IUD again.

If I could go back in time I would never do it again. It's not worth the risks (for me).

345 Share Report Save

smalltowngirly · 3m

This happened to me too. Went to get it out due to painful sex. Doc took one look at me and asked me how I was letting anyone touch me with an infection this bad. Hurt like hell coming out. Never ever again.

148 Share Report Save

Caveatsubscrptor · 3m

The infection spread into my body and eventually I was close to sepsis.

Everyday I'm in pain.

It's very defeating.

111 Share Report Save

seastaarr · 3m

I went to get mine taken out after a year of painful painful PAINFUL cramps during my periods. Doc also took one look at me and said maybe the pain was due to the infection I unknowingly had, and maybe I should treat it before getting the IUD out. I said heck no, get it out of me, give me antibiotics, never again lol. I'm thinking about getting the implant in the arm.

71 Share Report Save

Blue_Lips0117 · 3m

I have the copper IUD and I don't like it. My period lasts about a week and a half (it used to last 4 days before) with spotting after a few days. Plus I always bleed when I have sex, I'm getting it removed soon and going back to the pill. This isn't to mention that insertion was horrible, I almost passed out.

1 Share Report Save

HudecLaca · 3m

Torture device.

I don't regret anything in life except getting an IUD. Made me hate the whole healthcare system, too.

1 Share Report Save

magicmollies · 3m

I got the copper IUD and had it in for less than 24 hours I was in SOOOOOO MUCH PAIN. I literally couldn't move - almost went to the ER in the middle of the night/ripped it out myself. Luckily I was able to make an appointment to get it removed the next morning though. All the pain went away instantly once it was removed.

It was a terrible experience for me, idk why it was so painful but the cramping was like something I have never experienced.

Overall it was all around a pretty traumatic experience.

5 Share Report Save

Acrobatic-Educator · 3m

I had similar experience where I had to get it removed shortly after it was inserted and in my case too, it felt like all the pain was gone the second it was out.

2 Share Report Save

furociousbear · 3m

I got the Mirena IUD and had it in for one year, it created a medical emergency for me. Every day my body would shake and I had no idea why, I would wake up from pain in the middle of the night all the time. I barely had a period.

The pain kept getting worse and so I was in and out of the emergency rooms a couple times. No doctor there knew how to take an IUD out. I had to wait a couple more days until I could be seen. When I finally had it taken out, I had an infection and a cyst which I've NEVER had before. I was on anti biotics for 2 weeks. I had the IUD taken out 3 years ago and was told my cycle should go back to normal after a year, I'm still dealing with the aftermath.

It truly is not worth putting something physical and foreign inside your body as it can lead to a lot of trauma and you may not even realize.

1 Share Report Save

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FELLOWSHIPS

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REFEREED JOURNAL PUBLICATIONS

- Francis, D., Pilny, A., **Zelaya, C.M.** (2022) Predicting interpersonal cancer talk among Black women in the United States following Aretha Franklin's death: the role of network-level factors. *Journal of Applied Communication*.
- Zelaya, C.M.**, Francis, D. B. (2021) Technology and sexual health communication among Black and Latinx young women. In Cooke-Jackson, A., Rubinsky, J. (Eds.), *Communicating Intimate Health*.
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- Helme, D.W., Morris, E., de la Serna, X., **Zelaya, C.M.**, Oser, C., Knudsen, H. (2021) "Country boys spit and dip": How masculinity and family contribute to rural adolescent smokeless tobacco use. *The Journal of Men's Studies*, 29(2), 213-234.
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