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PERCEIVED STUDY BENEFITS AND SUGGESTIONS FOR FUTURE BENEFICIARIES ACROSS RANDOMIZATION ARMS AMONG PARTICIPANTS IN ZEHRP'S FAMILY PLANNING EXIT INTERVIEW QUESTIONNAIRE

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2006

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An abstract of
A thesis submitted to the Faculty of the
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Abstract

PERCEIVED STUDY BENEFITS AND SUGGESTIONS FOR FUTURE BENEFICIARIES ACROSS RANDOMIZATION ARMS AMONG PARTICIPANTS IN ZEHRP'S FAMILY PLANNING EXIT INTERVIEW QUESTIONNAIRE

By Christina Marie Chouinard

Background: HIV/AIDS is an issue affecting millions of people worldwide. Not only does this pandemic threaten the lives of those infected with the virus, but it leaves both families and communities devastated as well. In Zambia, the prevalence rate of HIV/AIDS is alarmingly high where, in urban areas, the rate is nearly 20 percent. In a country where heterosexual sex accounts for approximately 90 percent of new infections, Zambian women are left particularly vulnerable. To address the challenges faced by HIV serodiscordant and concordant couples in Zambia, the integration of future planning services, family planning services, and HIV programs has been suggested in previous research.

Purpose: The purpose of this study was to develop an understanding of the beliefs and opinions reported by study participants after having been enrolled into and completing participation in the Zambia-Emory HIV Research Group's (ZEHRP) Family Planning study.

Methods: This study is a secondary data analysis of data compiled from an Exit Interview Questionnaire administered at the conclusion of the Family Planning study. Study participants had been randomized to different groups at enrollment in the study to examine the impact of a video-based motivational intervention on future planning behaviors among concordant HIV-positive and discordant couples in Lusaka, Zambia. In this study, participant responses were examined across intervention groups to determine whether or not the intervention participants received was associated with the responses they provided during participation in the Exit Interview Questionnaire.

Results: Significant differences were found across intervention groups among all study participants and across gender. Those with exposure to the video-based motivational intervention alone or in combination with a methods intervention were significantly more likely to indicate variables related to future planning as beneficial in comparison to those who had not received exposure to the motivational intervention.

Discussion: Exposure to a video-based motivational intervention modeling desirable outcomes coupled with access to an advisor may positively influence ZEHRP clinic beneficiaries' opinions of the information and services they receive. It may also indicate an existing need for the inclusion of future planning information and access to advisors in clinic services among this population.

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CHAPTER I: INTRODUCTION

Introduction and Rationale

HIV/AIDS in Zambia

An issue affecting millions of people worldwide, HIV/AIDS is a disease that particularly affects those living in Zambia. As one of the countries most affected by the epidemic in Africa, the prevalence rate of adults aged 15-49 living with HIV/AIDS in Zambia is 14 percent (Central Statistical Office [CSO], Ministry of Health, Tropical Diseases Research Centre, University of Zambia, and Macro International Inc., 2009). The primary mode of HIV/AIDS transmission in Zambia is heterosexual, accounting for approximately 90 percent of new HIV infections, leaving women particularly vulnerable to infection. In urban populations, the general estimation of disease prevalence is 19.7 percent. Among urban women, the prevalence rate among women is disproportionately higher, at 26.3 percent, than it is among urban men, 19.2 percent (CSO et al, 2009). This extends to rural areas of Zambia as well, where rural women are also at a higher risk of contracting the disease than are rural men.

In addition to women, children in Zambia are also severely affected by the HIV/AIDS epidemic. As the most common cause of children losing one or both of their parents, there are approximately 800,000 orphans and vulnerable children in Zambia who have been orphaned due to HIV/AIDS (CSO et al, 2009). Among the numerous physical and psychological impacts that this disease can have on a child, the inability to attend school also compounds the issue. The impact of this occurrence does not end at the child,

however, as there are also social and economic implications that arise when a child becomes orphaned.

Listed as one of the top six causes of death worldwide and as one of the top four causes of death in low-income countries (World Health Organization [WHO], 2008), HIV/AIDS is a public health problem for many reasons. In addition to causing debilitating illness and premature death among people infected with the disease, the social and economic impacts of this disease are equally severe (Global Health Council, 2011). The impact of this disease is not only felt at the individual level among those infected with the disease; rather, the impact of this disease is also felt significantly on local, national, and international levels.

Zambia-Emory HIV Research Project

Located in Lusaka, Zambia, the Zambia-Emory HIV Research Project (ZEHRP), one of the main research sites of the Rwanda Zambia HIV Research Group (RZHRG), maintains the second longest-standing and second largest heterosexual HIV discordant couples' cohort in the world. Members of this cohort receive free HIV couples' voluntary counseling and testing (CVCT) and HIV/AIDS education. Additionally, if eligible to participate in on-going studies conducted by ZEHRP, couples are also provided with free reproductive health planning and treatment for sexually transmitted diseases.

In July 2002, ZEHRP implemented a randomized control trial (RCT) called the "Factorial Design RCT to Promote Family Planning in HIV Infected Zambian Couples." The main objective of this study was to examine the impact of a video-based motivational intervention on future planning behaviors among concordant HIV-positive and discordant

couples in Lusaka, Zambia (Stephenson et al., 2008). While all study participants enrolled in the study received education about contraceptive methods and were provided with access to these methods at the study clinic, participants receiving the video-based intervention of interest were also presented with information regarding financial and estate planning. The intention of presenting this information was to encourage study participants to engage in future planning activities such as will writing, appointing a guardian, generating new income, and saving money to pay for education.

A total of 1,504 couples were enrolled in the Family Planning study from July 2002 to July 2005 and followed through July 2006. At their last visit, study participants were asked a series of questions during the Family Planning Exit Interview, a questionnaire designed as a tool to gather information regarding study participants' perceptions of the Family Planning study, information gained from having participated in the study, methods of contraception, and plans for the future. Although publications exist regarding the data compiled during ZEHRP's Family Planning study (Mendenhall et al., 2007; Stephenson et al, 2008), there are no publications related to the information compiled through the Family Planning Exit Interview Questionnaire.

Purpose

The purpose of this study was to develop an understanding of the beliefs and opinions reported by study participants after having been enrolled into and completing participation in ZEHRP's Family Planning study. Study participants' beliefs and opinions regarding HIV/AIDS, family planning and future planning were analyzed by examining their reported benefits of having participated in the study as well as their suggestions for services to be offered by ZEHRP to future clinic beneficiaries.

In the present study, a secondary data analysis is conducted with respect to some of the information collected through ZEHRP's administration of a Family Planning Exit Interview Questionnaire. This study examines the correlations between the interventions to which ZEHRP beneficiaries were exposed during their participation in the Family Planning study and their respective responses pertaining to useful or beneficial aspects of ZEHRP services that they received and that can be offered to future beneficiaries. Using the Health Belief Model, this study seeks to demonstrate that there are positive correlations between the study participants' responses regarding useful or beneficial aspects of services resulting in participation with ZEHRP and the study interventions where motivational messages promoting family planning techniques were presented. Specifically, the objective of this study is to answer the following two questions:

1. Are Exit Interview participants' perceived benefits of having been involved with ZEHRP affected by the interventions participants received during enrollment in ZEHRP's Family Planning study?

2. Are Exit Interview participants' suggestions for services to be offered by ZEHRP to future clinic beneficiaries affected by the interventions participants received during enrollment in ZEHRP's Family Planning study?

Theory

The Health Belief Model is the grounding theory of this study. For behavior change or, in the case of this study, behavior adoption to occur, "people must feel threatened by their current behavioral patterns" (Glanz, Rimer, & Lewis, 2002, p. 51). The motivational messages to which study participants were exposed during their participation in the Family Planning study were intended to serve as the catalyst in helping participants become aware that future planning may be lacking in their current situation, thereby threatening their future financial and family security. When indicated

as a benefit of study participation, engaging in future planning behaviors becomes the defining action to take in order to reduce the risks that these participants have associated with not engaging in those behaviors. According to the Health Belief Model, the balance of perceived benefits and perceived barriers then determine whether or not a person actually engages in the action (Glanz et al, 2002).

Significance

This study was designed to explore whether or not there are correlations that exist between the interventions to which ZEHRP's Family Planning study participants were exposed and study participants' perceptions and future suggestions regarding services provided by ZEHRP. HIV prevention measures are best implemented and sustained when the population of interest perceived the intervention measures as beneficial. It is hoped that this study will inform ZEHRP and other organizations offering HIV family planning services in their efforts to provide beneficiaries with effective and valuable services pertinent to their needs and desires.

CHAPTER II: REVIEW OF LITERATURE

Brief Overview of Zambia

Geography

Located in Southern Africa, Zambia covers an area of 752,618 square kilometers, which is slightly larger than the state of Texas (Central Intelligence Agency [CIA], 2011). With mostly high plateaus and some hills and mountains characterizing the country's terrain, the climate in Zambia is primarily tropical, with exceptions in areas with higher altitudes (CIA, 2011). Landlocked, Zambia shares its borders with those of Angola, Democratic Republic of the Congo, Malawi, Mozambique, Namibia, Tanzania, and Zimbabwe. The capital city of Zambia, Lusaka, is located in the south-central part of the country and is home to approximately 1.7 million (U.S. Department of State, 2010).

Demographics

Zambia has a population of approximately 13 million people (U.S. Department of State, 2010). With the GDP per capita estimated at $1,144 (Joint United Nations Programme on HIV/AIDS [UNAIDS], 2011), 68% of the population lives below the national poverty line (United Nations Statistics Division, 2010), Although agriculture comprises only 19.7% of Zambia's GDP, this sector employs 85% of the labor force (CIA, 2011). Of the total population in Zambia, 36% is located within urban areas (CIA). There are more than 70 ethnic groups and, although English is the official language of Zambia, there are also about 70 local languages and dialects spoken throughout the country (U.S. Department of State). Roughly 1 million people are currently living with HIV/AIDS in Zambia. Of this number, 120,000 are children

between the ages of 0 and 14 who were infected through mother-to-child transmission (United Nations Children's Fund [UNICEF], 2010). Largely attributed to HIV/AIDS, the life expectancy at birth in Zambia is 48 years (UNAIDS).

Education and Literacy

In support of the Millennium Development Goals (MDGs), Zambia's Ministry of Education has committed to free education for Zambians through grade seven. This initiative has contributed to the increase of school attendance through grade seven (United States Agency for International Development [USAID], 2007). As such, the school life expectancy, or the number of years a child can expect to be enrolled in school, is seven years for women, and eight years for men (CIA, 2011).

As of 2003, the literacy rate of the general population was 80.6%. The literacy rate among men was higher, at 86.8%, than that of women, whose literacy rate was 74.8% (CIA, 2011).

History and Government

Zambia attained its independence from the United Kingdom on October 24, 1964, after its secession from the Federation of Rhodesia and Nyasaland (a federation from what now are Zimbabwe and Malawi). Known previously as Northern Rhodesia, the Republic of Zambia became a self-governing nation under a new, more democratic constitution (U. S. Department of State, 2010). However, its lack of trained and educated Zambians capable of running the government, coupled with an economy largely dependent of foreign expertise, left Zambia with a number of challenges after attaining its independence. In the mid-1970s, the price of copper, Zambia's primary export, plummeted. This served as a major hindrance in the country's ability to repay its

growing debt. During the late 1970s, civil war in the former Portuguese colonies left Zambia with refugees to support and blockages in its railroad system, further decreasing the country's already limited capacity to transport goods (U.S. Department of State). Despite many efforts by its government, poverty has remained a significant problem Zambia since attaining its independence.

In 1991, in response to strong public demand, a new constitution was enacted. The "one-party participatory democracy" approach to government, which had been maintained by the United National Independence Party (UNIP), Zambia's sole legal party, was abandoned and Zambia became a multi-party democracy (U.S. Department of State, 2010). The three branches of government resemble most modern, democratic states with executive, legislative, and judicial branches. The legislative branch is unicameral and the executive branch is selected by popular vote every five years (CIA, 2011).

HIV/AIDS

HIV is a severely debilitating disease that ravages the immune system leaving those infected with the virus vulnerable to a plethora of illnesses and ailments. According to the Centers for Disease Control and Prevention (CDC), HIV is spread primarily by not using a condom during sex with a person who has HIV (2010). The risk of infection is increased by having multiple sex partners or by the presence of other sexually transmitted diseases (STDs). Being born to an infected mother presents a risk to unborn and newborn children, as HIV can be transmitted from mother to child during pregnancy, birth, or breast-feeding. Activities related to drug use, such as sharing needles, syringes, rinse water, or other equipment used in drug preparation also serve as

one of the primary means of disease transmission (CDC, 2010). Upon becoming infected with the virus, HIV severely damages a person's immune system by attacking and destroying CD4+ cells, cells which are crucial to the immune system's ability to protect the body against diseases (CDC, 2010). Once HIV reduces a person's CD4+ cell count to below 200 cells/µl of blood, a person meets the CDC case definition of AIDS. At this point in the progression of the disease, the infected person's immune system is severely damaged and has difficulty fighting other diseases and certain cancers (CDC). If left untreated, almost all cases of HIV will progress to AIDS (National Institutes of Health [NIH] & U.S. National Library of Medicine, 2011).

There are currently more than 33 million people living with HIV worldwide, with sub-Saharan Africa home to two-thirds of this population (UNAIDS, 2010). Given such statistics, as well as the broad-spanning health and social implications of the disease, HIV/AIDS is a major public health problem. As the number of people living with HIV increases, AIDS-related illnesses remain one of the leading causes of death globally (UNAIDS & World Health Organization [WHO], 2009). The transmission of HIV occurs across all geographic regions, ethnicities, ages, religions, races, and classes. Specific populations are, however, more vulnerable to infection than others. Commercial sex workers, men who have sex with men, and intravenous drug users are, for example, populations with disproportionately high HIV prevalence rates in many regions throughout the world (Chipamaunga, Muula, & Mataya, 2010; Figueroa, 2008; Rao, Mboi, Phoolcharoen, Sarkar, & Carael, 2010).

In sub-Saharan Africa, HIV disproportionately affects women, where they account for 60% of all HIV infections and are the caregivers to 90% of the world's HIV-

infected children (Kako, Stevens, & Karani, 2011). Young women aged 15-24 are particularly vulnerable to HIV infection where, in some areas, the HIV prevalence rate among this population is nearly three times that of men within the same age group. Social, economic, and cultural factors including transactional partnerships with older men leave young women particularly vulnerable to HIV infection. In gender-inequitable and transactional sexual relationships, women are not commonly granted decision making power regarding behavioral change and condom use as these decisions are typically controlled by men, limiting the ability of women to reduce their own risk of HIV infection (McCoy, Watts, & Padian, 2010).

Physical Effects of HIV/AIDS

While many people infected with HIV do not experience any symptoms related to the disease, others may experience disease effects in a broad range of manifestations. Such symptoms include: persistent diarrhea, fatigue, and fever. Swollen lymph glands, headache, sore throat, muscle stiffness or aching, as well as a general feeling of discomfort, illness, or lack of well-being may also be present among those infected with HIV. Mouth sores such as oral thrush have also been identified as symptoms of HIV, as have skin disorders, such as seborrheic dermatitis. Women may also experience frequent vaginal yeast infections (NIH & U.S. National Library of Medicine, 2011).

Not only may HIV itself manifest itself negatively on the body, but it also leaves its victims vulnerable to coinfection with other diseases as well. As HIV attacks the body, a person's immune system becomes less able to fight off other disease-causing bacteria and viruses, opening the door to a myriad of other illnesses. HIV/AIDS coinfection is likely to occur with various forms of cancer and other opportunistic

infections, including: bacillary angiomatosis, candidiasis, cytomegalovirus infection, cryptococcal infection, cryptosporidium enterocolitis, *Mycobacterium avium* complex (MAC) infection, *Pneumocystis jiroveci* pneumonia, salmonella, toxoplasmosis, tuberculosis, and progressive multifocal leukoencephalopathy (viral infection of the brain) (NIH & U.S. National Library of Medicine, 2011). Compounding the symptomatic burden a person infected with HIV might be faced with include ailments such as dementia, lipodystrophy, and chronic wasting, all of which are also associated with HIV infection (NIH & U.S. National Library of Medicine, 2011).

Disease coinfection increases the risk for diseases to affect the patient more significantly or at a more rapid rate. According to a number of studies, there is a close link between HIV and tuberculosis infection. As a result of their suppressed immune systems resulting from HIV, people infected with the virus become much more susceptible to contracting and suffering from tuberculosis as well (Chaisson & Martinson, 2008; Diedrich & Flynn, 2011). Once infected with tuberculosis, HIV patients are also significantly more likely to experience faster rates of disease progression, as observed by Lawn, Wood, & Wilkinson (2011). Similar effects of coinfection are present with Hepatitis C. Not only is this disease common among people infected with HIV, but it can compounded by the presence of HIV. A review summarizing the most recent studies pertaining to HIV/Hepatitis C coinfection concluded that HIV-infected patients should be screened regularly for Hepatitis C infection due to increased progression rates to AIDS and liver disease that is commonly seen among patients coinfected with both diseases (Operskalski & Kovacs, 2011).

Social Effects of HIV/AIDS

The effects of HIV/AIDS are not only physical, but psychological as well. Studies have shown that depression prevalence increases in the presence of HIV/AIDS, particularly among people with symptomatic HIV (Atkinson et al., 2008). Research shows that depression among those infected with HIV can become life threatening where, regardless of economic status, depression has been found to be associated with reduced treatment adherence and increased disease progression and mortality among HIV/AIDS patients (Marwick & Kaaya, 2010).

In addition to causing severe physical and psychological effects, HIV/AIDS also has negative impacts on the family structure. Children are adversely affected by the disease through either their own infection, or through the infection of one or both parents. When a parent becomes infected, children tend to leave school in order to care for the ailing parent(s) and younger siblings, leaving them less likely to receive or complete their education (Global Health Council, 2011). According to UNAIDS & WHO (2009), more than 14 million children in sub-Saharan Africa had lost one or both parents to AIDS as of 2008. Many of these children are now at risk of exiting the educational system due in order to compensate for the loss of heads of households. Furthermore, the reduced income attributed to one's inability to work, coupled with the increased costs related to HIV/AIDS treatment and healthcare, leaves people infected with HIV less able to provide for their families, leaving many individuals and households impoverished as a result of HIV/AIDS (Global Health Council).

The impacts of HIV/AIDS reach far beyond individuals infected with the virus. The effects are also felt at community, national, and international levels as resources

provided by hospitals, social services, schools and businesses are strained. HIV/AIDS increases the demand for health services while simultaneously reducing the health service sector's ability to supply such services. As the demand for health services for HIV/AIDS rises, people with other health conditions get crowded out of hospitals and other health care facilities, limiting their ability to receive health care. Compounding the issue, fewer people are interested in filling jobs within the health professions because of increased workloads, exposure to HIV infection and associated work stress (Yu, Souteyrand, Banda, Kaufman, & Perriëns, 2008). The overall number of health care professionals able to care for those infected with HIV/AIDS has also decreased as new cases of HIV/AIDS infection occur among health care professionals. This results in fewer health care professionals able to work as a result of their own infection with HIV/AIDS. This deterioration of the skilled labor force has extended to teachers, and business and government leaders as well, leading to the abandonment of these rolls due to HIV infection among professionals in the workforce (Global Health Council, 2011).

Stigma

Fear of stigma surrounding HIV/AIDS and those infected with the virus prevent many people from being tested for the virus or, when the serostatus is known, from disclosing one's status to sexual partners. A qualitative study of the reactions of urban and rural HIV-infected Kenyan women to their HIV diagnosis cited that "fear of stigma can drive people away from knowing their HIV status" (Kako et al., 2011, p. 291). Meanwhile, a survey of five Zambian districts indicated that two thirds of married women who were starting antiretroviral therapy said they had not disclosed their HIV status to their husbands for fear of blame or abandonment (Zulu, 2005). It has also been

shown that self-stigma significantly increases the psychological burden of having HIV and leads to non-adherence to HIV treatment, loss to follow-up, and unnecessary early death (Kako et al.). Women, already considered to comprise a vulnerable population in sub Saharan Africa, become more likely to be subjected to forms stigma when infected with HIV. They face external stigma from their surrounding communities, increasing their risk of abuse, abandonment, as well other forms of rejection and stigma (Kako et al.).

HIV/AIDS in Zambia

In comparison to the overall HIV/AIDS adult prevalence of 5.2% rate in Sub-Saharan Africa (UNAIDS & WHO, 2009), Zambia's prevalence rate is alarmingly high. In 2005, with a HIV prevalence rate of 17%, Zambia was one of only eight countries globally with a national adult HIV prevalence rate in excess of 15% (UNAIDS & WHO, 2007). Reflecting a general global decline in HIV prevalence rates, however, the prevalence rate in Zambia has since decreased to roughly 13.5%. Despite this decline, Zambia continues to have one of the highest HIV prevalence rates among all countries (UNICEF, 2010). Averages presented in the data also do not account for differences existing between urban and rural locales. According to the Central Statistical Office, the HIV prevalence rate in urban areas, where it is estimated to be 19.7%, is nearly two times higher than it is in rural areas where the prevalence rate is 10.3% (CSO, 2009). This differential is also present in other HIV related statistics. According to HIV surveys conducted at antenatal clinics by the Zambian Ministry of Health in 2005, for example, it was found that HIV infection levels among pregnant women are higher in urban areas than they are in rural areas (25% versus 12%, respectively), as did earlier population-

based survey estimates reported by the Central Statistical Office Zambia and the Central Board of Health Zambia & ORC Macro (UNAIDS & WHO, 2007).

The social situation in Zambia further compounds the vulnerability of women to HIV/AIDS. Not only do women experience HIV infection more commonly than men, but they are also subjected to discrimination in the event that their partner becomes sick or dies as a result of his infection.

> As a male-dominated society, women have little legal power to protect their assets in the event of partners' death. When women lose their husbands, breadwinners and heads of the household to AIDS, they often lose access to the little property and funds that the family has (Mendenhall et al., 2007).

The practice of 'property grabbing' is commonplace in Zambia, where, in the event of a man's death, the deceased husband's family members often seize property assumed to have belonged to the deceased (Richardson, 2004). Widows are left with little recourse in the reclaiming of their property since, despite existing statutory laws, women are often treated as minors under customary law and are prohibited from owning property (Richardson). As Mendenhall et al. conclude, the concerns expressed by Zambians regarding this issue suggest the need for actions to be taken to prevent property grabbing from already vulnerable families.

Family Planning

Family planning efforts are supported as a method of HIV/AIDS prevention for their capacity to reduce the transmission of HIV by a number of organizations. The World Bank supports family planning efforts on the premise that the integration of HIV/AIDS with reproductive health programs may improve women's access to services that prevent the spread of HIV/AIDS. By providing women with access to preventive

methods that they can control, such as mircobicides and female condoms, women can become active in reducing their vulnerability to contracting HIV/AIDS (The World Bank, 2005). UNAIDS (1999) also supports family planning programs among HIV infected women of childbearing age, allowing them to make informed decisions about becoming pregnant or avoiding pregnancy.

A research study conducted by Hoffman et al. (2008) demonstrates one way in which the integration of these two services are effective in reducing HIV transmission. The goal of their study was to estimate the effect that receiving HIV-positive test results, received during VCT, have on intentions to have future children as well as on use of contraceptives. To do so, a questionnaire was distributed to a group of women in Malawi after having received positive HIV test results, conducted at family planning clinics or VCT centers. The study concluded: "With knowledge of their HIV-positive status, women were less likely to desire future pregnancies. Pregnancy incidence was lower among women not desiring future children. Integration of VCT, FP, and HIV care could prevent mother-to-child HIV transmission" (Hoffman et al., 2008, p. 477). Given that mother-to-child transmission is one the primary modes of HIV transmission, allowing potential mothers to know their HIV status and providing them with access to services allowing them to plan accordingly is an effective tool in decreasing HIV transmission.

Other research studies support the findings of Hoffman et al., including an evaluation by King et al. (1995) of the impact of a family planning intervention on hormonal contraceptive use in a group of HIV-positive and HIV-negative urban Rwandan women, it was concluded that the greatest reduction in incident pregnancy was among HIV-positive women, and that access to and information about hormonal contraceptives

resulted in increased use and reduced attrition among both HIV-positive and HIV-negative women participating in the study. Allen et al. (2007) found that the integration of family planning and HIV services served as a positive method of intervention among HIV-positive individuals among HIV-infected urban childrearing women, aged 18-35 years in Kigali, Rwanda. Research by Mark et al. (2007) also supports the integration of these services, as shown in a RCT examining the impact of an intervention to promote dual-method contraceptive use among HIV concordant and discordant couples already using condoms for HIV prevention. It was found that the selection of a longer-acting injectable contraceptive was associated with lower pregnancy rates among HIV-positive women. The existing research studying the impact of family planning on HIV/AIDS has lead many researchers to conclude that the integration of HIV programs and services with family planning measures should be used as approach in the reduction of HIV transmission (Shelton & Fuchs, 2004; Hoffman et al., 2008).

Although the benefits of the integration of family planning programs with HIV/AIDS services is recognized on a number of levels, there are still gaps in the populations with access to these programs. UNAIDS & WHO claim that, "although serodiscordant couples account for a substantial percentage of new infections in some African countries, HIV testing and counseling programmes are seldom geared specifically for serodiscordant couples" (2009, p. 9). Programs generally focus on providing family planning services to women, as they are more directly impacted by the services. However, in countries where gender inequalities exist, men need to be integrated into the decision making process related to family planning process. Forsyth et al. (2002) cite both qualitative and quantitative research indicating that a number of

variables affect the decision to continue to engage in unprotected sexual intercourse. For both men and women, these variables include: "beliefs that may conflict with HIV-preventive behavior, social norms that relegate condom use to sex with nonintimates, perceived deleterious effects of condom use on sexual health, and threats to masculinity conferred by condom use" (Forsyth et al., p. 1798). They conclude that it is important to include men in programs where HIV and family planning services are combined.

Future Planning

For the purposes of this study, future planning behaviors include those practices outlined by Susan Allen in her Family Planning study, including will writing, naming a guardian, managing money to keep one's children in school, banking services, and the reduction of alcohol use for the good of the family. Previous literature detailing future planning behaviors among individuals infected with HIV in an African setting is quite limited. However, a need for integration of these services in HIV and family planning services has been expressed. In 2007, Mendenhall et al. examined the contents of wills written by Zambians who are either in HIV concordant positive or HIV discordant marital relationships in Lusaka, Zambia. This examination led to the conclusion that there is an existing desire among this population to will their belongings and to protect the financial future of their families through the writing of wills (Mendenhall et al., 2007).

Additional research by Stephenson et al. (2008) regarding messages motivating future planning behaviors in the context of HIV CVCT services further demonstrates the need for the integration of future planning services. In a video-based motivational intervention promoting future planning behaviors among concordant HIV-positive and

discordant couples in Lusaka, Zambia, it was found that participation in the intervention was associated with both will writing and with naming a guardian (Stephenson et al., 2008). As research suggests, there is a need for the integration of future planning services, family planning services, and HIV programs given the challenges faced by HIV serodiscordant and concordant couples in Zambia.

CHAPTER III: METHODS

Study Overview and Objectives

The goal of this study was to determine whether or not the intervention Family Planning study participants received played a role in participant responses during administration of the Exit Interview Questionnaire. It is hoped that the results of this study will be utilized to inform ZEHRP's development of family planning initiatives targeted to HIV discordant couples in Zambia. The objective of this study is to answer the following questions:

1. Are Exit Interview participants' perceived benefits of having been involved with ZEHRP affected by the interventions participants received during enrollment in ZEHRP's Family Planning study?
2. Are Exit Interview participants' suggestions for services to be offered by ZEHRP to future clinic beneficiaries affected by the interventions participants received during enrollment in ZEHRP's Family Planning study?

Null Hypotheses

The null hypotheses for the study were as follows:

1. Exit Interview participants' perceived benefits of having been involved with ZEHRP are not affected by the interventions to which participants were exposed during participation in the Family Planning study.
2. Exit Interview participants' suggestions for services to be offered to future clinic beneficiaries are not affected by the interventions to which participants were exposed during participation in the Family Planning study.

Research Design

This study is a secondary data analysis of data collected by ZEHRP in a randomized controlled study. The questions posed by this study have been answered through the analysis of ZEHRP's Family Planning Exit Interview Questionnaire, which

was administered to study participants exiting ZEHRP's study, the "Factorial Design RCT to Promote Family Planning in HIV Infected Zambian Couples."

Data compiled during the Family Planning study were obtained through interviews conducted by ZEHRP Family Planning study personnel using various questionnaires developed by ZEHRP and RZHRG for use in the Family Planning study in Lusaka, Zambia. The information obtained during these interviews includes, but is not limited to, information pertaining to study participants' demographic information, economic status, health information, HIV status, behavioral information, and opinions. Other health information was collected during medical examinations conducted by ZEHRP medical personnel. All of the data obtained during the Family Planning study has been collected in order to answer its following study questions:

- What is the level of knowledge about family planning methods in Zambian couples?
- What obstacles stand in the way of Zambian men and women who desire to use contraception to prevent pregnancy?
- What can be done to overcome these obstacles?
- Will educating men and women as well as providers about longer acting methods of contraception encourage their use?
- Will talking to people about planning their family's future, including financial planning, will preparation, etc, influence their decision to use contraception and the likelihood of pregnancy?

To obtain information capable of answering these questions, the Family Planning study was designed such that all couples were randomized to one of four groups using a two-step factorial design. The four groups included a control group where no intervention was administered to participants; a 'method-focused' (methods) group where long acting contraception, particularly the intrauterine device (IUD) and implant, was emphasized and promoted, and concerns about side effects were addressed; a 'planning-focused (motivational) group where 'planning for the family's future' was promoted,

including financial planning, estate planning, etc; and a group that received both the 'method-focused' and the 'planning-focused' interventions. All four groups also received education about contraceptive methods and were given access to those methods at the study clinic. Other services provided to study participants included yearly physical exams where they were screened for STDs and, if infected, were offered free treatment.

After administration of the interventions to participating couples, women were followed for pregnancy and contraceptive use at 3-month intervals until the close of the trial. During these clinic visits, particular attention was given to the documentation of contraceptive side effects and complications that might have arisen. All participants were granted access to free treatment for the side effects and complications by the project clinic.

In order to provide a comprehensive analysis of the perceptions and opinions of participants in the Family Planning study, this study examines data collected by ZEHRP during its Family Planning study using a descriptive/correlational design. This approach is used in order to describe Family Planning study participants' behaviors and opinions as they pertain to the interventions to which they were exposed.

Study Sample

The ZEHRP clinic, located at 112 Vubu Road, Lusaka, Zambia, Africa, primarily provides its voluntary HIV testing services to the northwest quarter of Lusaka. This area is densely populated and was selected as the clinic location because it was not served by the three existing voluntary confidential HIV testing centers.

Cohabitating heterosexual couples requesting voluntary confidential HIV counseling and testing (VCT) at ZEHRP's clinic in Lusaka, Zambia were screened for

eligibility to participate in the Family Planning study. Couples were recruited for study participation based on the following inclusion criteria: at least one partner was HIV-positive; couples were ambulatory; both partners were willing to enroll in the study at the same time; men had to be at least 16 years old while women could be between the ages of 16 and 38 years old. Excluded from study participation were couples where the woman was pregnant, functionally or surgically infertile, and/or less than six weeks post-partum.

After meeting all inclusion and exclusion criteria, receiving their invitation to participate in the Family Planning study, and attending a half-day visit (-1 visit) to the ZEHRP clinic for enrollment, study participants were asked to return to the clinic one week later for their next visit (0 visit). During this half-day visit, participants were randomized into their intervention groups and received the respective interventions. After receipt of the interventions, women returned to the clinic every three months for one half day for STD testing and for confirmation that they were not pregnant. Men returned to the clinic with women at their final clinic visit for questionnaire administration, during which the Family Planning Exit Interview Questionnaire was administered.

The Family Planning Exit Interview data used in this study contains information compiled from a total of 1,121 participants. However, this complete data set was composed not only of participants who had been interviewed using the final version of the Exit Interview, but also of participants who had been interviewed using the pilot version. As such, the 66 participants interviewed using the pilot version were excluded from this study in order to ensure that inaccurate or unreliable information that might have been obtained during the testing phase of the Exit Interview instrument were not

included in this study's analyses. The remaining 1,055 participants interviewed using the final version of the Family Planning Exit Interview dataset served as the sample population for this study.

Participant Demographics

A total of 1,055 participants were included in this study based on having met the criteria set forth by ZEHRP in order to participate in the Family Planning study, as well as the inclusion criteria set forth by this study. Data from a total of 566 women and 489 men were analyzed.

With the exception of four men and four women, all participants had reported having lived in Lusaka for at least one year prior to their enrollment in the Family Planning study. According to responses of men to the number of years they and their respective partners had been cohabitating at enrollment into the Family Planning study, couples had been cohabitating with one another for an average of 7.5 years (ranging from 1 to 24 years).

Among the participants included in this study, 950 participants exited the Family Planning study at the same time as their respective partners and also completed the Exit Interview, meaning there are 425 couples included in this study. The remaining 105 participants in this study, 91 women and 14 men, had partners who did not complete the Exit Interview. Among these participants, seven men and 11 women had partners who died before the end of the Family Planning study.

This is a unique study sample in that study participants provide insight into the impact that having participated in the Family Planning study had on its study sample.

The Exit Interview could only be administered to those who had in fact been enrolled and randomized in the Family Planning study.

Data Collection

Data used in this study were collected at the ZEHRP clinic in Lusaka, Zambia on and between January 5, 2005 and November 22, 2006 as participants concluded their participation in the Family Planning study. With the use of structured questionnaires, developed, pilot tested, and administered by ZEHRP study personnel, Family Planning study participants were asked to respond to each study question after it had been read out loud by study personnel. Questions were formatted in both English and Nyanja, one of the local languages commonly spoken in Lusaka, in order to ensure that all participants were able to understand the questions being asked of them. Questions pertaining to participants' opinions regarding their participation in the Family Planning study were asked. They were also asked to provide their opinions regarding information that should be made available to couples seeking ZEHRP services in the future. ZEHRP staff collected additional information regarding gender and the intervention received by participants during enrollment in the Family Planning study.

Of the questions asked during administration of the Exit Interview Questionnaire, responses to the following was used to meet the first objective of this study:

> Could you tell us what was useful or beneficial about your participation with us here at ZEHRP?

This question was left as an open-ended question, where participants were able to answer with whichever benefits occurred to them. This allowed participants to respond unprovoked by Exit Interview administrators or by the intentions of the study. Positive responses were matched to a number of categories applicable to the study, as well as to

an 'other' category. The second objective of this study was met through analysis of responses to the following question:

> We would like your thoughts on what services we could include for couples who come to the center. Do you think it would be helpful to include the following information for couples who come together to seek HIV testing?

For responses to this question, participants were read a list of four possible statements and were asked to indicate which of the statements they agreed with. Again, only positive responses were recorded.

In order for this study to be conducted, Dr. Susan Allen, Director of RZHRG, granted access to a final dataset containing the Exit Interview data as well as additional information pertaining to Family Planning study participant data, such as gender and study interventions that participants received. All data used in this study were compiled in SAS and then transferred to SPSS by RZHRG staff in Atlanta, Georgia. RZHRG staff, familiar with the datasets produced by ZEHRP, ensured that all variables included in the dataset compiled for this study, were linked only to the final version of the Exit Interview. All personal identifiers had previously been removed from the datasets.

Prior to conducting its Family Planning study, ZEHRP obtained approval from the Emory University Institutional Review Board (IRB) and also from local IRB institutions in Zambia. Because this study is focused on information gathered from the Family Planning study, approval for secondary analysis of the Family Planning data was granted by Emory University's IRB as a modification to the Family Planning study's ongoing IRB approval. No additional submissions were required for the purposes of this study given that it was added to a study was that had current approval status from the Emory IRB.

Data Analysis

The analyses included in this secondary data analysis were conducted using statistical software, SPSS 17.0 for Mac. Tables and graphs were produced using Microsoft Excel 2004 Version 11.5.6 for Mac. Analyses included in this study involved descriptive statistics and multivariate tests for interaction.

Descriptive statistics were conducted in order to gain a better understanding of the characteristics pertaining to the Family Planning participants included in this study. Meanwhile, multivariate tests for interaction using contingency tables were used to determine whether or not there were associations between the Family Planning study interventions to which participants were randomized and participants' responses to the questions asked during administration of the Exit Interview Questionnaire. Specifically, participants' responses to the question, "Could you tell us what was useful or beneficial about your participation with us here at ZEHRP?" were examined for the analysis of study question 1:

> Are Exit Interview participants' perceived benefits of having been involved with ZEHRP affected by the interventions participants received during enrollment in ZEHRP's Family Planning study?

The responses of participants' to the question, "We would like your thoughts on what services we could include for couples who come to the center. Do you think it would be helpful to include the following information for couples who come together to seek HIV testing?" were analyzed to answer study question 2:

> Are Exit Interview participants' suggestions for services to be offered by ZEHRP to future clinic beneficiaries affected by the interventions participants received during enrollment in ZEHRP's Family Planning study?

Contingency tables were used in order to determine whether or not associations existed between the interventions to which Family Planning study participants were randomized and the responses provided by study participants during their Exit Interviews. The multivariate tests for interaction allowed for identification of whether or not study participants' reported opinions and behaviors differed according to the interventions that they had been exposed to during the Family Planning study. Analysis of these variables across gender was also conducted. Pearson's chi-square test of independence was used to determine the statistical significance of associations, where a p-value of less than 0.05 was considered statistically significant. All percentages were rounded to the nearest integer.

CHAPTER IV: RESULTS

Of the 1,055 participants included in this study, 46% are men and 54% are women. Table 1 shows the distribution of study participants across randomization arm. Each of the four arms contained approximately 25% of study participants, which held true across gender as well.

Study Question 1

The distribution of study participants' perceived benefits in response to the Exit Interview question: "Could you tell us what was useful or beneficial about your participation with us here at ZEHRP?" is shown in Table 2. Percentages shown in this table exceed 100 because study participants were allowed to indicate multiple benefits to having participated in the Family Planning study.

Among all study participants, the aspect of the Family Planning study considered most beneficial by participants was learning *how to prevent HIV transmission in marriages* (69%). Learning *how to take better care of my health* (63%) was also commonly cited as a benefit of Family Planning study participation among study participants. While more than 50% of both men and women cited these two variables as benefits of Family Planning study participation, women indicated these factors as benefits more frequently than did men. Learning *how to prevent HIV transmission in marriages* was cited by 75% of women, while 61% of men considered it to be a study benefit. Similarly, 70% of women cited learning *how to take better care of my health* as a benefit, while 54% of men did. The majority of women also considered both receiving

contraceptive services at ZEHRP (55%) and learning *how to help my partner take better care of health* (51%) as benefits to their participation in the Family Planning study.

Table 3 shows the results of a multivariate test evaluating the perceived benefits reported by all Family Planning study participants included in this study across randomization arm. Strong significant differences in perceived benefits were found across arms for *how to make a will*, *how to name a guardian*, *how to manage money to keep my children in school*, and *banking services*. Among these aspects of study participation, there was a significantly higher tendency to report these aspects as benefits among those randomized to the Motivational or Both arms. Figure 1 provides a closer look at these differences. A total of 15% of study participants cited *how to make a will* as a benefit of study participation: 9% of the Methods arm, 10% of the Control arm, 18% of the Motivational arm, and 23% of participants of the Both arm. *How to name a guardian* was reported by 7% of study participants as a benefit to participating in the Family Planning study, with 2% of the Methods arm, 6% of the Control arm, 10% of the Motivational arm, and 12% of the Both arm. Also with 7% of all participants citing it as a study benefit, *how to manage money to keep my children in school* was listed as such by 3% of the Control arm, 5% of the Methods arm, 10% of the Motivational arm, and 11% of the Both arm. Overall, 3% of study participants considered *banking services* to be a benefit: 0% of the Methods arm, 1% of the Control arm, 3% of the Both arm, and 7% of the Motivational arm.

Table 4 shows the prevalence of perceived benefits reported by men included in this study across randomization arm. Strong significances were found across arms for *how to make a will*, *how to manage money to keep my children in school,* and *banking*

services. Significances were also found across arms for *how to name a guardian* and *sexual health services (STIs)*. Figure 2 shows that there was a significantly higher tendency to report these aspects as benefits among those randomized to the Motivational or Both arms. A total of 13% of men indicated *how to make a will* as a benefit of participating in the Family Planning study: 7% of the Methods arm, 8% of the Control arm, 16% of the Motivational arm, and 22% of the Both arm. For *how to manage money to keep my children in school*, 10% of all men reported this as a study benefit: 3% of the Control arm, 7% of the Methods arm, 12% of the Motivational arm, and 16% of the Both arm. Of all men included in this study, 4% indicated *banking services* as a benefit of study participation: 0% of the Methods arm, 2% of the Control arm, 3% of the Both arm, and 8% of the Motivational arm. *How to name a guardian* was cited by 5% of all men as a study benefit: 0% of the Methods arm, 1% of the Motivational arm, 4% of the Control arm, and 8% of the Both arm. Overall, 22% of men considered *sexual health services (STIs)* a benefit of having participated in the Family Planning study: 14% of the Methods arm, 21% of the Control arm, 26% of the Motivational arm, and 28% of the Both arm.

Table 5 shows the prevalence of perceived benefits reported by women included in this study across randomization arm. Strong significances were found across arms for *how to name a guardian* and *banking services.* Significances were also found across arms for *how to make a will*, *how to manage money to keep my kids in school*, and *contraceptive services at ZEHRP*. Figure 3 shows that there was a significantly higher tendency to report these aspects of study participation as benefits among those randomized to the Motivational or Both arms. A total of 10% of women indicated *how to name a guardian* as a benefit of having participated in the Family Planning study: 4% of

the Methods arm, 7% of the Control arm, 13% of the Motivational arm, 15% of the Both arm. *Banking services* was cited by 3% of all women as a study benefit: 0% of the Control arm, 1% of the Methods arm, 3% of the Both arm, and 7% of the Motivational arm. *How to make a will* was cited by 17% of all women as a study benefit: 11% of the Methods arm, 12% of the Control arm, 20% of the Motivational arm, and 23% of the Both arm. Of all women, 5% indicated *how to manage money to keep my children in school* as a study benefit: 2% of the Methods arm, 3% of the Control arm, 6% of the Both arm, and 9% of the Motivational arm. *Contraceptive services at ZEHRP* was considered a benefit of Family Planning study participants by 55% of all women included in this study: 49% of the Methods arm, 51% of the Control arm, 54% of the Both arm, and 64% of the Motivational arm.

Study Question 2

The distribution of study participants' suggestions for services to be offered to future clinic beneficiaries in response to the Exit Interview question: "We would like your thoughts on what services we could include for couples who come to the center. Do you think it would be helpful to include the following information for couples who come together to seek HIV testing?" is shown in Table 6. Percentages shown in this table exceed 100 because study participants were allowed to indicate multiple benefits to having participated in the Family Planning study.

The majority of study participants (81%) suggested *family planning counseling* as a service to be offered to future beneficiaries of the ZEHRP clinic. More women (86%) than men (75%) indicated this as a service to be offered. Similarly, across the other three possible services to be offered to future beneficiaries, *advice about preparing a will*,

advice about naming a guardian, and *access to contraceptive methods difficult to find in local clinics*, women had a higher tendency to select these services to be offered in the future. In comparison to men (36%), the majority of women (51%) suggested that *advice about preparing a will* be offered in the future. *Advice about naming a guardian* was suggested by 46% of women while 24% of men suggested it. Women (46%) also suggested *access to contraceptive methods difficult to find in local clinics* more frequently than men (31%).

Multivariate analysis of all study participants' suggestions for services to be offered to future ZEHRP clinic beneficiaries across all randomization arms showed no significant differences (Table 7). The same held true when analyzed according to men' suggestions for future services to be offered, where no significant differences were observed across randomization arms (Table 8). Among women, however, significant differences regarding *advice about preparing a will* were observed among women across randomization arms (Table 9). A total of 51% of women suggested that this be offered to future clinic beneficiaries: 43% of the Methods arm, 48% of the Control arm, 54% of the Both arm, and 59% of the Motivational arm (Figure 4).

CHAPTER V: DISCUSSION

Interpretation of Results

This secondary data analysis provides evidence suggesting that exposure to a video-based motivational intervention modeling desirable outcomes coupled with access to an advisor may positively influence ZEHRP clinic beneficiaries' opinions of the information and services they receive. Analysis of all study participants' perceived benefits of having participated in the Family Planning study across randomization arm revealed significant differences. These differences were found only in the study aspects pertaining uniquely to exposure to the motivational video. While other possible benefits of study participation were made available by ZEHRP to all study participants, information regarding *how to make a will*, *how to name a guardian*, *how to manage money to keep my children in school*, and *banking services* was not disseminated by ZEHRP to participants in the Control or Methods arms. Participants randomized to the Control or Methods arms could partake in these activities elsewhere if they so chose, but were not shown the motivational video or provided access to an advisor in support of such behaviors at ZEHRP. Participants in the Motivational or Both arms, however, all received exposure to motivational messages and were provided with access to an advisor. They were also significantly more likely to indicate these variables as benefits of their study participation than were participants in the Control or Methods arms. This association between exposure to motivational messages and the perception of them as beneficial may indicate an existing need for the inclusion of future planning information and access to advisors in clinic services among concordant HIV-positive and discordant

couples in Lusaka, Zambia. Further implications of these results might include that motivational messages could positively influence the opinions and/or behaviors of this population regarding future planning behaviors.

Results from gender sensitive analysis of study participants' perceived benefits of having participated in the Family Planning study across randomization arm suggest that there is little variation among the opinions of men and women. Men randomized to the Motivational or Both arms were significantly more likely than men randomized to the Control or Methods arms to indicate variables pertaining to future planning as study benefits. Similarly, women randomized to the Motivational or Both arms were significantly more likely than their Control or Methods counterparts to cite the future planning variables as benefits of study participation. The perceived benefit of motivational messages across gender may indicate that there is an existing need for the inclusion of future planning information and access to advisors among both men and women. It may further indicate that these messages could positively influence the opinions and/or behaviors of both partners of concordant HIV-positive and discordant couples in Lusaka, Zambia regarding engaging in planning for the future.

In addition to the benefits related to future planning, analysis also revealed that men cited receiving *sexual health services (STIs)* as a benefit of having participated in the Family Planning study. Although sexual health services were offered to all study participants, men randomized to the Motivational or Both arms were significantly more likely to cite this aspect of study participation as a benefit than were men in the Control or Methods arms. This may suggest that men exposed to motivational messages and provided with access to future planning advisors might be more aware of or sensitive to

the benefits related to sexual health services than men who are not exposed to family planning services.

With regard to Family Planning study benefits among women, receiving *contraceptive services at ZEHRP* was cited as an additional benefit of study participation. Although contraceptive services were offered to all women enrolled in the Family Planning study, women randomized to the Motivational arm were significantly more likely indicate this as a benefit than were women in the Control, Methods, or Both arms. This may suggest a connection between receiving contraceptive services and exposure to motivational messages. Specifically, women exposed to motivational messages and provided with access to future planning advisors might be more sensitive to the long-term impact of contraception and the related implications of planning for the future.

Results from the distribution of study participants' perceived benefits of Family Planning study participation indicate higher response rates among women compared to men regarding learning *how to prevent HIV transmission in marriages*, learning *how to take better care of my health*, receiving *contraceptive services at ZEHRP*, and learning *how to help my partner take better care of their health*. This increase in women's reported perceived benefits to specific aspects related to participation in the Family Planning study suggests a possible preexisting gap in knowledge related to these variables between genders. Specifically, these results indicate that women may be lacking information regarding HIV transmission prevention, how to properly care for their own health and that of their partner, as well as a lack of information and/or access to contraceptive services.

Results also indicate a significant difference in the responses among women regarding suggestions for services to be offered to future ZEHRP clinic beneficiaries. Here, women randomized to the Motivational or Both arms indicated that *advice about preparing a will* should be offered to future clinic beneficiaries significantly more frequently than did women randomized to the Control or Methods arms. This may suggest that women exposed to motivational messages not only perceive will preparation as a benefit for themselves, as demonstrated by the results of this study, but that they also consider information of this study aspect important for dissemination to future beneficiaries.

The overall results of this study demonstrate additional implications with respect to the durability of the motivational messages presented to study participants of ZEHRP's Family Planning study. In an analysis of the short-term impact of these interventions on Family Planning study participants, Stephenson et al. (2008) concluded that, in conjunction with access to advisors, the motivational intervention modeling desirable outcomes can influence future planning actions. The significant difference existed between participants who received the motivational intervention and those who did not, indicating that the motivational message was an important catalyst in engaging in future planning behaviors. However, that presence of some level of these behaviors among those who had not been exposed to the motivational intervention indicated a general need among participants for some future planning services (Stephenson et al.). Although the Family Planning Exit Interview Questionnaire discussed in this study had been administered to study participants long after exposure to respective study interventions, this study reports findings similar to those reported by Stephenson et al. This indicated

that exposure to future planning motivational messages and access to advisors not only had a short-term impact as discussed by Stephenson et al., but it also had a durable impact. The responses of study participants during the Exit Interview indicate that they were still impacted by the motivational messages at the time of the Exit Interview where aspects related to future planning were again reported as beneficial.

Limitations

The sample of study participants contains a very specific group of people not representative of the general population of Lusaka, Zambia. All couples included in this study contained at least one partner who was HIV-positive. Additionally, couples invited to participate in the Family Planning study were self-selected to come to the ZEHRP clinic for CVCT. Because they were already motivated to seek information related to their HIV status, they might also be more likely to be interested in information related to future planning. Despite self-motivation of study participants, the results of this study indicate that motivational messages and access to an advisor are associated with the acknowledgement of future planning behaviors as benefits of study participation.

Self-reporting is another limitation of this study, as is the case for all studies analyzing data consisting of information pertaining to beliefs, opinions, or actions of study participants. Self-reporting limits the reliability of results because it cannot be guaranteed that participants are 100% honest in their responses. Further compounding this is the presence of other people, such as a questionnaire administer. In these situations, participants might tailor their responses to coincide with the intention of the interview question or with what they consider to be socially acceptable. For example, participants might have indicated a beliefs or opinions to coincide with the goals of the

study in an attempt to appeal to researchers affiliated with the Family Planning Exit Interview.

Recommendations for Future Research

While research has been conducted assessing whether or not the motivational messages presented during ZEHRP's Family Planning study were associated with the adoption of future planning behaviors (Stephenson et al., 2008), there has been no analysis of whether or not participants' perceived benefits of having been in the study are associated with the adoption of such behaviors. In the context of the Health Belief Model, perceiving future planning behaviors as beneficial could be used as an indicator as to whether or not participants eventually adopt such behaviors. With additional research, perceived benefits could also be used to identify whether or not participants are even contemplating taking action, demonstrated by talking about taking action with their partner, an advisor, a potential guardian, etc. Given this information, additional questionnaires could be developed in order to identify ways that would be effective in promoting a shift among participants from acknowledging the benefits of future planning activities to considering them for themselves, and eventually to taking action.

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Table 1

Distribution of Study Participants by Randomization Arms (N = 1,055)

	Men		Women		Total	
	n	%	*n*	%	*n*	%
Control	118	24	144	25	262	25
Methods	121	25	134	24	255	24
Motivational	134	27	154	27	288	27
Both	116	24	134	24	250	24

Table 2

Distribution of Study Participants by Perceived Benefits Responses (N = 1,055)

	Men		Women		Total	
	n	%	*n*	%	*n*	%
How to prevent HIV transmission in marriages	299	61	425	75	724	69
Knowledge about contraception	171	35	200	35	371	35
Contraceptive services at ZEHRP	181	37	310	55	491	47
Sexual health services (STIs)	109	22	121	21	230	22
District scheme card	147	30	197	35	344	33
Referral services	63	13	33	6	96	9
How to take better care of my health	266	54	395	70	661	63
How to help my partner take better care of their health	183	37	290	51	473	45
How to make a will	65	13	94	17	159	15
How to name a guardian	22	5	55	10	77	7
How to manage money to keep my children in school	48	10	29	5	77	7
Banking services	17	4	15	3	32	3
How to reduce alcohol use	38	8	11	2	49	5

Table 3

Perceived Benefits by Randomization Arms: All Study Participants (N = 1,055)

	Control		Methods		Motivational		Both		
	n	%	*n*	%	*n*	%	*n*	%	x
How to prevent HIV transmission in marriages	190	73	176	69	197	68	161	64	3.943
Knowledge about contraception	83	32	92	36	97	34	99	40	3.925
Contraceptive services at ZEHRP	122	47	115	45	140	49	114	46	0.789
Sexual health services (STIs)	61	23	44	17	68	24	57	23	4.128
District scheme card	83	32	84	33	104	36	73	29	3.045
Referral services	20	8	21	8	36	13	19	8	5.617
How to take better care of my health	166	63	158	62	185	64	152	61	0.783
How to help my partner take better care of their health	116	44	112	44	135	47	110	44	0.674
How to make a will	26	10	24	9	52	18	57	23	25.476 **
How to name a guardian	15	6	5	2	28	10	29	12	21.034 **
How to manage money to keep my children in school	8	3	12	5	30	10	27	11	18.181 **
Banking services	2	1	1	0	21	7	8	3	28.418 **
How to reduce alcohol use	8	3	12	5	15	5	14	6	2.222

*$p < 0.05$. **$p < 0.01$.

Table 4

Perceived Benefits by Randomization Arms: Men (N = 489)

	Control		Methods		Motivational		Both		
	n	%	*n*	%	*n*	%	*n*	%	x
How to prevent HIV transmission in marriages	74	63	77	64	82	61	66	57	1.319
Knowledge about contraception	32	27	41	34	48	36	50	43	6.678
Contraceptive services at ZEHRP	49	42	49	41	41	31	42	36	4.059
Sexual health services (STIs)	25	21	17	14	35	26	32	28	7.839 *
District scheme card	33	28	38	31	40	30	36	31	0.405
Referral services	14	12	14	12	24	18	11	10	4.507
How to take better care of my health	63	53	67	55	69	52	67	58	1.079
How to help my partner take better care of their health	43	36	47	39	44	33	49	42	2.507
How to make a will	9	8	9	7	21	16	26	22	15.916 **
How to name a guardian	5	4	0	0	8	6	9	8	9.263 *
How to manage money to keep my children in school	4	3	9	7	16	12	19	16	12.605 **
Banking services	2	2	0	0	11	8	4	3	14.418 **
How to reduce alcohol use	5	4	10	8	12	9	11	10	2.833

*$p < 0.05$. **$p < 0.01$.

Table 5

Perceived Benefits by Randomization Arms: Women (N = 566)

	Control		Methods		Motivational		Both		
	n	%	*n*	%	*n*	%	*n*	%	x
How to prevent HIV transmission in marriages	116	81	99	74	115	75	95	71	3.679
Knowledge about contraception	51	35	51	38	49	32	49	37	1.358
Contraceptive services at ZEHRP	73	51	66	49	99	64	72	54	8.299 *
Sexual health services (STIs)	36	25	27	20	33	21	25	19	1.835
District scheme card	50	35	46	34	64	42	37	28	6.165
Referral services	6	4	7	5	12	8	8	6	1.900
How to take better care of my health	103	72	91	68	116	75	85	63	5.237
How to help my partner take better care of their health	73	51	65	49	91	59	61	46	5.970
How to make a will	17	12	15	11	31	20	31	23	10.734 *
How to name a guardian	10	7	5	4	20	13	20	15	12.755 **
How to manage money to keep my children in school	4	3	3	2	14	9	8	6	9.108 *
Banking services	0	0	1	1	10	7	4	3	14.678 **
How to reduce alcohol use	3	2	2	2	3	2	3	2	0.219

*$p < 0.05$. **$p < 0.01$.

Table 6

Distribution of Study Participants by Suggestions for Future Services Responses (N = 1,055)

	Men		Women		Total	
	n	%	*n*	%	*n*	%
Family planning counselling	367	75	485	86	852	81
Advice about preparing a will	177	36	289	51	466	44
Advice about naming a guardian	119	24	260	46	379	36
Access to contraceptive methods difficult to find in local clinics	153	31	259	46	412	39

Table 7

Suggestions for Future Services by Randomization Arms: All Study Participants (N = 1,055)

	Control		Methods		Motivational		Both		
	n	%	*n*	%	*n*	%	*n*	%	x
Family planning counseling	212	81	212	83	230	80	198	79	1.473
Advice about preparing a will	110	42	102	40	134	47	120	48	4.442
Advice about naming a guardian	91	35	87	34	115	40	86	34	2.784
Access to contraceptive methods difficult to find in local clinics	98	37	95	37	115	40	104	42	1.420

*$p < 0.05$. **$p < 0.01$.

Table 8

Suggestions for Future Services by Randomization Arms: Men (N = 489)

	Control		Methods		Motivational		Both		
	n	%	*n*	%	*n*	%	*n*	%	x
Family planning counseling	89	75	94	78	98	73	86	74	0.772
Advice about preparing a will	41	35	45	37	43	32	48	41	2.487
Advice about naming a guardian	26	22	33	27	35	26	25	22	1.626
Access to contraceptive methods difficult to find in local clinics	32	27	40	33	41	31	40	35	1.711

*$p < 0.05$. **$p < 0.01$.

Table 9

Suggestions for Future Services by Randomization Arms: Women (N = 566)

	Control		Methods		Motivational		Both		
	n	%	*n*	%	*n*	%	*n*	%	x
Family planning counseling	123	85	118	88	132	86	112	84	1.108
Advice about preparing a will	69	48	57	43	91	59	72	54	8.822 *
Advice about naming a guardian	65	45	54	40	80	52	61	46	4.002
Access to contraceptive methods difficult to find in local clinics	66	46	55	41	74	48	64	48	1.743

*$p < 0.05$. **$p < 0.01$.

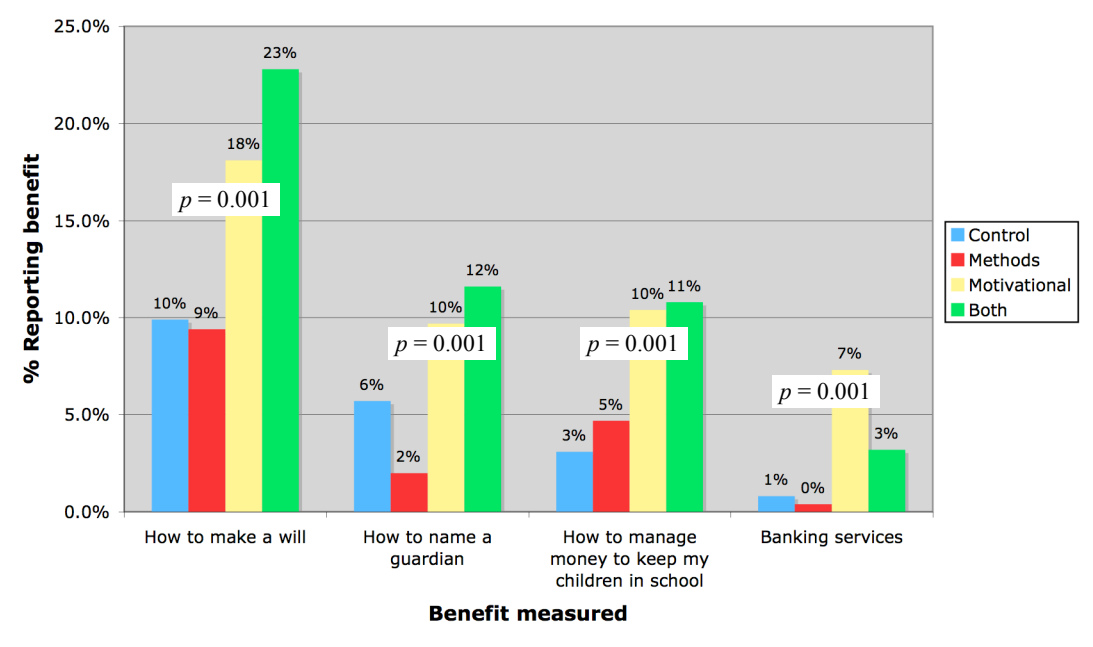

Figure 1. Perceived Benefits by Randomization Arms: All Study Participants

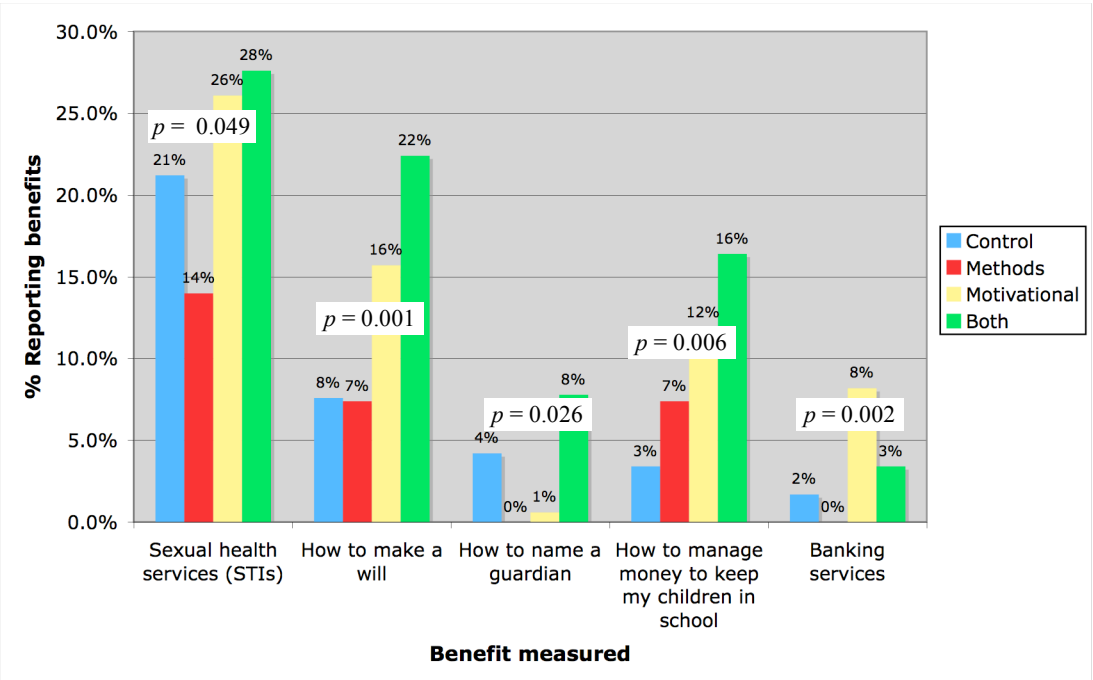

Figure 2. Perceived Benefits by Randomization Arms: Men

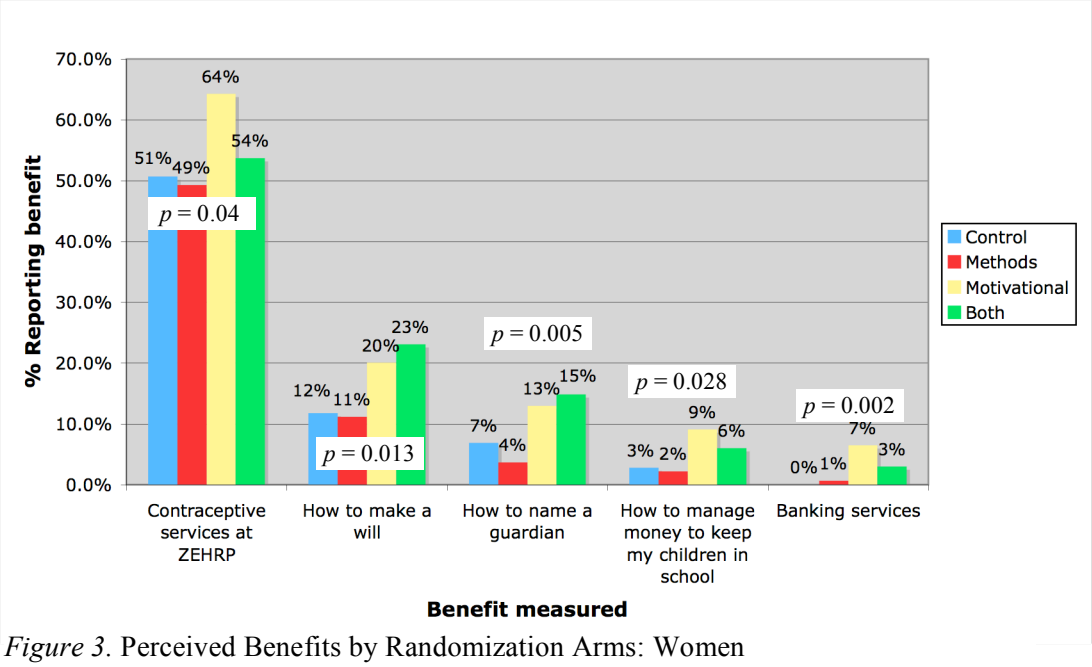

Figure 3. Perceived Benefits by Randomization Arms: Women

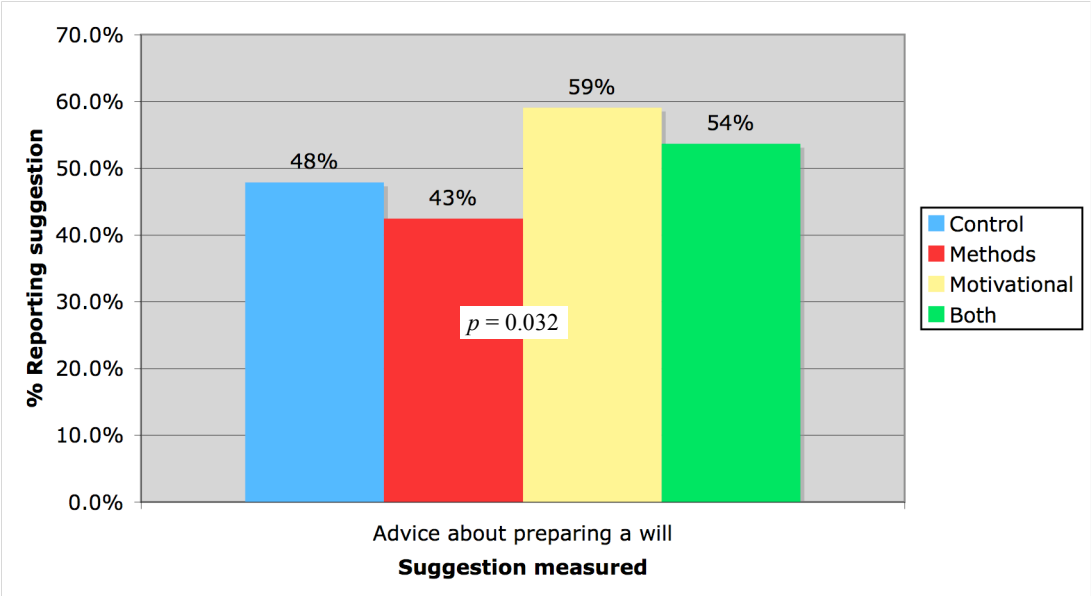

Figure 4. Suggestions for Future Services by Randomization Arms: Women